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MultiGain Wireless
CMAP 8000 Ver. 2.3

Installation & Maintenance

November 2003
S/N 213671

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About this Guide

The CMAP 8000 version 2.3 release is part of the general MGW software version 2.3. The package is also compatible with MGW software versions 1.2/2.0/2.1/2.2. This new issue describes the current CMAP man machine interface (initiated in CMAP Ver 1.2), enabling the user to define additional system features during installation, upgrading or later modifications of the MGW system. These include the definition of three additional frequency bands: 3.6, 3.7 and 3.8 GHz.

Version 2.3 can configure an additional RPCU, or re-configure/upgrade an existing RPCU. The two new features, flexible RPCU configuration and concentrated E1 interface, are independent of one another and can be separately assigned. However, Alvarion recommends that these two features be activated at the same opportunity in order to minimize system initialization.

It contains the following chapters:

- Chapter 1 – Introduction: Provides an overview of the CMAP 8000.
- Chapter 2 – Installation: Details the hardward requirements and software installation instructions.
- Chapter 3 – Operation: This chapter provides an orientation to the main screens and their operations
- Chapter 4 – System Workflow: Systematic provisioning of new subscribers over the MGW system is described in the form of step-by-step instructions for installation personnel, system operators and managers.
- Chapter 5 – Main Map: Describes the main map and all of its features.
- Chapter 6 – RPCU Shelf: This chapter reviews the RPCU shelf as part of the main map.
- Chapter 7 – E1 Map: Provides a detailed description of the E1 Map including the alarm status.
- Chapter 8 – RPU/RPC Map: Describes the RPU/RPC map, its alarm status and statistics.

- Chapter 9 – SU Map: This chapter provides a description of the SU map, SU maintenance and performance details.
- Chapter 10 – Alarm Log: Provides information on the CMAP 8000 Alarm Log which is a visual record of all events occurring in the MultiGain Wireless system.
- Chapter 11 –Security: The Security menu item allows the user to control system log-in and log-out operations, regulate access to menu items according to varying levels of responsibility and seniority, as well as retrieve security alarm and access information as required.
- Chapter 12 – Options: In this chapter the user is introduced to the Options menu and all of its features.
- Chapter 13 – Help: Describes the Help function.
- Appendix A – Remote Monitoring (RMON): The RMON utility enables software downloading as well as monitoring and control of the communication performance between RPU/RPC's and affiliated SU's.
- Appendix B – CMAP to RPCU Connections: This appendix describes how to physically connect the PC that runs the CMAP8000 & RMON to the MGW RPCU, either directly (locally), or remotely via a Dial-up modem.
- Appendix C – Interconnecting Cables: Provides a list of various cables needed to perform all the connections and installations.
- Appendix D – Time Diversity: This appendix describes the Time Diversity feature, which enables the MGW system to allocate two time slots on the radio link, in each frequency hop, to improve the quality of the telephone connection.
- Appendix E – Performance and Traffic Monitoring: Provides information on sesion and global parameters.
- Appendix F – Automatic Software Download: This chapter explains the Automatic Software DownLoad (ASDL) utility which replaces the RMON by upgrading and improving operation.
- Appendix G – Convert Utility Ver. 1.05: The convert utility described here reassigns ports of V5.2 single mode E1, initially used in any MGW system, to new logical ports of V5.2 Multi E1 links.
- Appendix H – Windows Load Target: This appendix describes the flash loading procedure for FAU card software using the Windows Load Target (WLT) utility program.

Multigain Wireless Technical Publications

The following list provides details on all the documents relating to MultiGain Wireless Technical Publications.

- **MultiGain Wireless System Manual** (P/N 8638-71910-00) contains descriptive information on MultiGain Wireless. The manual includes the following parts:
  - **Part 1: MultiGain Wireless System Overview** – concise description of system capabilities and components, integration with CO equipment, general configuration options, optional equipment and general description of management and provisioning options. Also, system functionality and technical descriptions.
  - **Part 2: MultiGain Wireless Central Office/Control and Interface System Installation and Operation Manual** – general description of the RPCU, GSS, AIU-120 and DIU units, physical and functional descriptions, site requirements, data related to installation planning, installation procedures for each item of equipment, cable connections, first-time operation, configuration and provisioning procedures, commissioning, troubleshooting and field maintenance.
  - **Part 3: MultiGain Wireless Radio Port System Installation and Operation Manual** – general description of the RPU and RPC units and associated antennae, physical and functional descriptions, site requirements and installation planning, installation procedures for each item of equipment, cable connections, first-time operation, configuration and provisioning procedures, commissioning, troubleshooting and field maintenance.
  - **Part4: MultiGain Wireless Subscriber System Installation and Operation Manual** – general description of the FAU, PCU and PDC/4 units, physical and functional descriptions, site requirements and installation planning, installation procedures for each item of equipment, cable connections, first-time operation, configuration and provisioning procedures, commissioning, troubleshooting and field maintenance.

- **CraftMap - CMAP 8000 Installation and Operation Manual (this manual)** (P/N 8638-71970-00) provides the information required for installing and operating the CMAP 8000 management tool.
- **CraftMap - CMAP 8010 Installation and Operation Manual** (P/N 8638-71971-00) provides the information required for installing and operating the CMAP 8100 management tool.
- **CraftMap - CMAP 8020 Installation and Operation Manual** (P/N 8638-71972-00) provides the information required for installing and operating the CMAP 8020 management tool.
- **SuperOfficeMap - SMAP 8100 Installation and Operation Manual** (P/N 8638-71990-00) provides the information required for installing and operating the SMAP 8100 management tool.
- **AIU-120 Concentrator Option Installation and Operation Manual** (P/N 8657-71436-00) provides the information required for AIU-120 installation, operation and maintenance.
- **DIU Installation and Operation Manual** (P/N 8674-71135-00) provides the information required for DIU installation, operation and maintenance.
- **DIU-T1 Installation and Operation Manual** (P/N 8657-71960-00) provides the information required for DIU-T1 installation, operation and maintenance.
- **MCX Installation and Operation Manual** (P/N 8619-71940-00) provides the information required the installation, operation and maintenance of the MGW Coverage eXtender (MCX) system equipment.
- **HFIT-2000 Operation Manual** (P/N 8626-71921-00) provides instructions for the operation of the Handheld FAU Installation Terminal (HFIT-2000).
- **HFIT Super User Manual** (P/N 8626-71471-00) provides super-user operating instructions for the Handheld FAU Installation Terminal (HFIT-2000).
- **HFIT-100 User Manual** (P/N 8626-71920-00) provides instructions for the operation of the Handheld FAU Installation Terminal (HFIT-100).
- **GPS Clock Technical Manual** (P/N 8821B-7) provides the information required for installing and operating the TRAK GPS receiver.
- **Symmetricom GPS Receiver** (P/N 194-335) provides instructions for installing and operating the Symmetricom GPS receiver.

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1

Chapter 1 - Overview

In this Chapter

- Introduction, page 1-2
- Introduction to Multigain Wireless, page 1-4

Introduction

The CMAP 8000 is a CraftMap maintenance and administration program for navigating the MultiGain Wireless System environment. CraftMap practice makes the perfect craftsman.

The CMAP 8000, incorporating RMON - MGW Remote MONitor program (see Appendix A) enables effortless site and customer equipment installation. The RMON utility handles remote software downloading to RPU/RPCs/FAUs.

The program offers the user an easy-to-use Man Machine Interface, featuring intuitive data entering capability for smooth communication with the management resources of the MultiGain Wireless System..

The CraftMap functions as a single shelf Network Element (NE) management station for the MGW system.

CraftMap provides for total system control from the C.O. to the subscriber's residence. The multi-tasking Windows platform enables several CraftMap windows to run simultaneously.

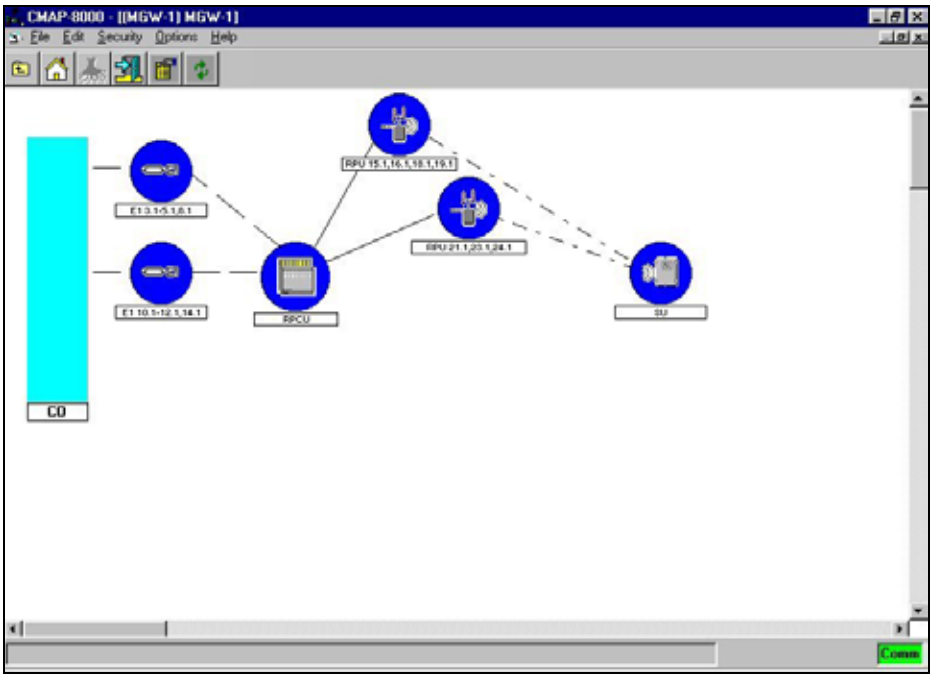


Figure 1-1: CraftMap Interface

NOTE

In all figures throughout the manual, RPU should read RPU/RPC

A highly beneficial feature of the CraftMap program is the enabling of graphic display of the system and its component parts according to a pre-defined color classification. Thus, the current alarm status is ascertained by observing the color display of the element, e.g., a faulty RPU/RPC will display “red.” If, for example, the “RPU/RPC 15.1…” element (see Figure 1-1) displays “red,” then one of the RPU/RPC’s of that group is faulty. The specific RPU/RPC is determined by double-clicking on the group object to display the next, more detailed display level, showing the layout of the individual RPU/RPC’s with the faulty RPU/RPC colored red. The subsequent stage is to identify the fault and obtain the appropriate solution using the interactive CraftMap menu.

Only enabled menu items for a highlighted element (the element in focus) are visible. A physical view of the element is obtained by double-clicking on the element. The physical representation includes alarm displays, etc.

The Windows screen comprises the product logo, menu bar, command buttons and data entry window: maps, data entry, equipment views

The CMAP 8000 map menu (main) items include:
File, Edit, *Configuration, Maintenance, Performance, Security*, Option and Help, where the italicized items are in accordance with TMN (Telecommunications Management Networks) requirements.

Introduction to Multigain Wireless

MultiGain Wireless is a Wireless Local Loop (WLL) system, which utilizes radio links instead of conventional copper based links to connect telephone subscribers to a local telephone network. The system provides toll quality voice channels, high quality data facsimile and modem, and is completely transparent to local exchange services and signaling. MGW supports a full range of network interfaces and protocol options.

MGW is not only easy to install and extremely economical, but is often the only practical solution in areas where copper-based infrastructures are difficult to implement. MGW can be applied to the following scenarios:

- New urban or suburban housing developments without an existing copper infrastructure.
- Urban environments where copper infrastructure is already saturated.
- Areas where digging in order to lay the foundations for a copper-based system is restricted.
- Temporary environments, such as exhibitions and conventions, as well as disaster zones.
- Rural environments, where copper cables may be an expensive option.

The MGW system is flexible and efficient in its use of the radio spectrum, and a wide range of optional frequency bands is available. This allows adaptation to the varying needs of different countries. The system uses Spread Spectrum Frequency Hopping technology, which has proved to be highly reliable in many scenarios, including those characterized by harsh environmental conditions.

MGW can be operated, maintained and the radio path monitored, using Alvarion's OfficeMap, CraftMap or SuperOfficeMap network management systems.

2

Chapter 2 - Installation

In this Chapter

- Minimum Hardware Requirements, page 2-2
- Software Installation, page 2-3

Minimum Hardware Requirements

- PC Pentium 300 MHz, running Windows[1] 95/98/ME[2].
- 64 Mbytes RAM.
- 500 Mbytes hard disk free space.
- 3-1/2" floppy drive
- CD-ROM drive.
- S-VGA graphics adapter card.
- One serial port.
- Microsoft or compatible mouse.
- Eicon S50 X.25 Card Adapter (for X.25 Network).
- PC compatible (e.g., 10 Base T, 3Com, etc) LAN Card Adapter (for TCP/IP Network).
- Parallel printer port and brand compatible printer.
- 17" monitor (or larger) with graphics accelerator for Windows.

[1] Windows is a trademark of Microsoft Corporation.

[2] Use original English (British Setting) Windows version only.

Software Installation

Alvarion's standard CMAP 8000 package consists of the user manual and CD.

Make sure that your PC hard disk is formatted and running Microsoft Windows 95/98/ME.

IMPORTANT

- The PC shall be dedicated to xMAP applications and the application shall be installed on Drive C:\. Only one version of each xMAP application can be installed on a given PC. The PC should be used exclusively for network management system requirements.
- Before installing the latest version of CraftMap, carry out the Receive config from RPCU operation using the current version. This completed, install the latest CraftMap Version 2.xx and carry out the Transmit config to RPCU using the new CraftMap.
- Before installing CraftMap, make sure that a printer is installed under Windows. Do not proceed before you have selected the printer.
- Make sure that your Windows display settings calls for Small Fonts so that CMAP 8000 screens can display maximum information.

CMAP 8000 Installation

To install the CMAP 8000:

1. Switch on your computer and wait for the Win 95/98/ME desktop to appear.
2. Insert the CD in the appropriate drive.
3. From the Windows Taskbar click the **Start** button to display the **Start** menu.
4. Click **Run** to open the **Run** dialog window.
5. Click the **Browse** button to display the Browse dialog window.
6. From the “Look in” dropdown list, select the CD-Rom drive to display the CD file contents.
7. Select and open the CMAP 8000 folder.
8. Highlight the SETUP.EXE file and click the **Open** button to return to the Run dialog window.
9. Click the **OK** button to initiate the installation wizard.

NOTE

It is not necessary to uninstall previous CMAP 8000 installations. If you have a current CMAP 8000 installation you are required to respond to the following pop-up window:

Attention
You have already installed a previous version of CMAP8000. If you continue installing the new release of CMAP8000 the application might not work.
To uninstall the previous version click 'YES', to continue with the installation click 'NO'.
Yes
No

Figure 2-1: Attention Pop-up Window

Click the Yes button to uninstall the previous version and continue the installation.

10. The Installation interaction wizard guides you through the installation procedure.
    Follow the instructions on the sequential screens:

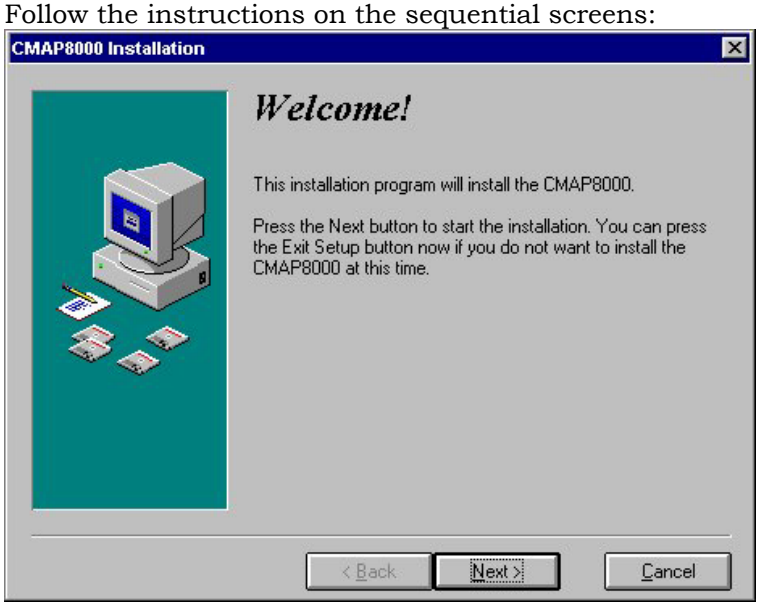

CMAP8000 Installation
Welcome!
This installation program will install the CMAP8000.
Press the Next button to start the installation. You can press the Exit Setup button now if you do not want to install the CMAP8000 at this time.
< Back
Next >
Cancel

Figure 2-2: Installation Wizard Screen No. 1

11. Press the Next button to display the “Select Destination Directory” pop-up window:

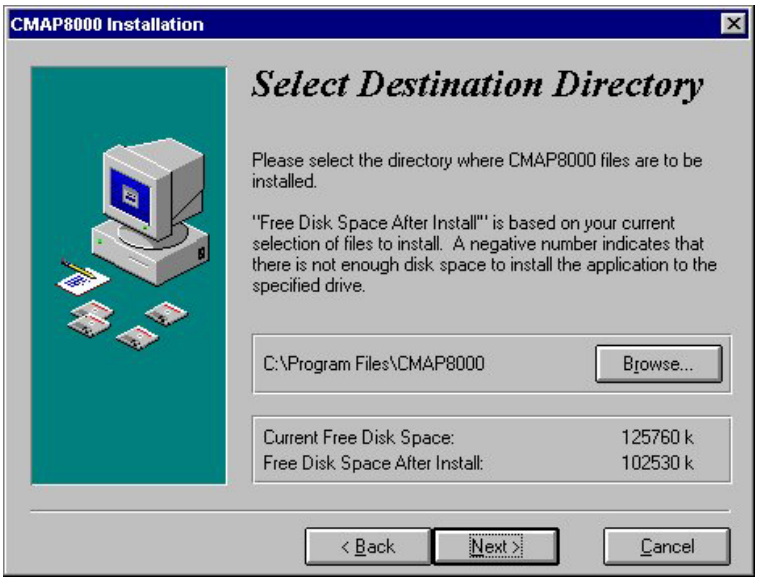

CMAP8000 Installation
Select Destination Directory
Please select the directory where CMAP8000 files are to be installed.
"Free Disk Space After Install"' is based on your current selection of files to install. A negative number indicates that there is not enough disk space to install the application to the specified drive.
C:\Program Files\CMAP8000
Browse...
Current Free Disk Space: 125760 k
Free Disk Space After Install: 102530 k
< Back
Next >
Cancel

Figure 2-3: Select Destination Directory Pop-up Window

12. Press the Next button to display the "Ready to Install" pop-up window:

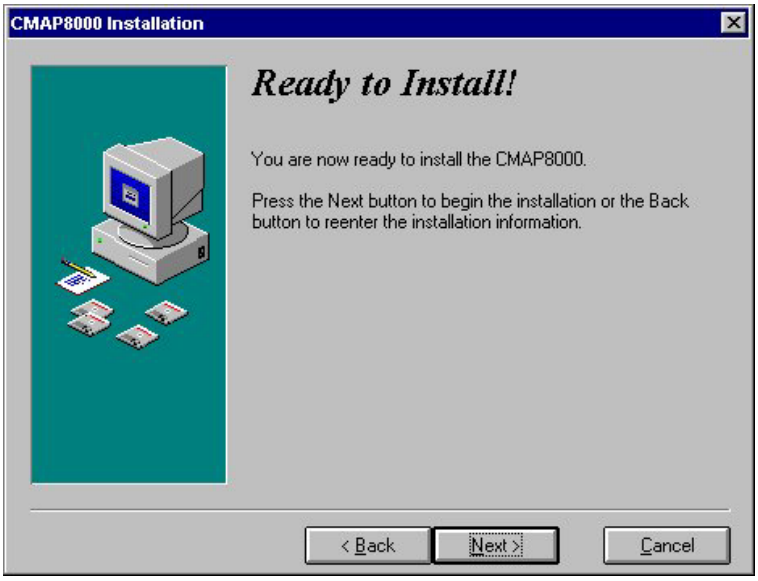

CMAP8000 Installation
Ready to Install!
You are now ready to install the CMAP8000.
Press the Next button to begin the installation or the Back button to reenter the installation information.
< Back
Next >
Cancel

Figure 2-4: Ready to Install Pop-up Window

13. Press the Next button to display the "Installing..." pop-up window:

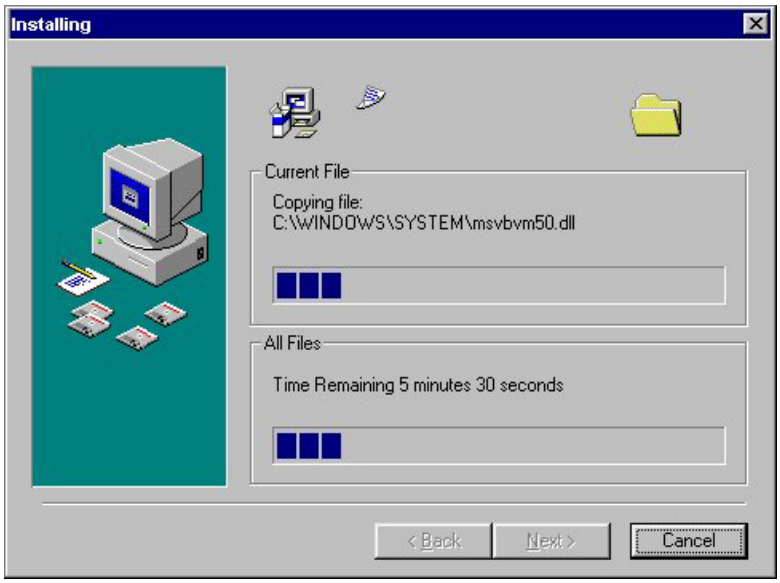


Figure 2-5: Installing Pop-up Window

14. When all the files have been copied from the installation diskettes to your hard disk, the Back and Next buttons in Figure 2-5 are enabled. Press the Next button to display the "Icon on Desktop" pop-up window:

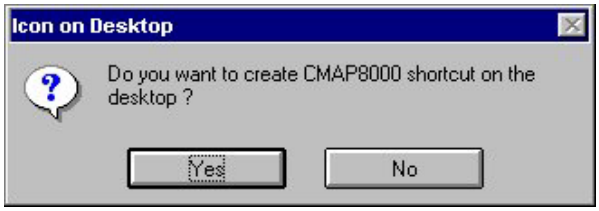


Figure 2-6: Icon on Desktop Pop-up Window

15. Click the Yes button to display the Setup INI pop-up window:

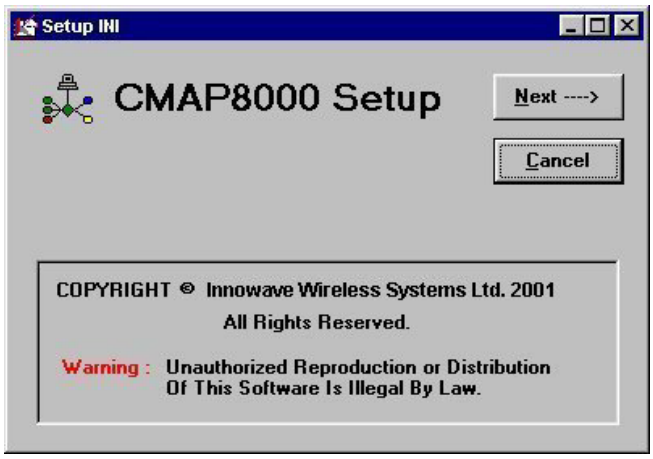


Figure 2-7: Setup INI Pop-up Window

16. Press the Next button to display the Frequency Hopping Mode pop-up window:

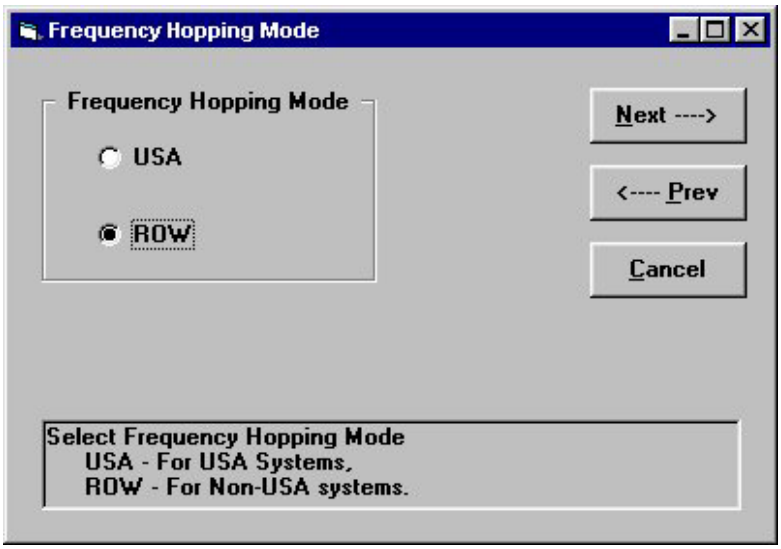


Figure 2-8: Frequency Hopping Mode Pop-up Window

Click the appropriate radio button (USA/Rest Of the World) in the Frequency Hopping Mode pane.

17. Press the Next button to display the Set Frequency Band pop-up window:

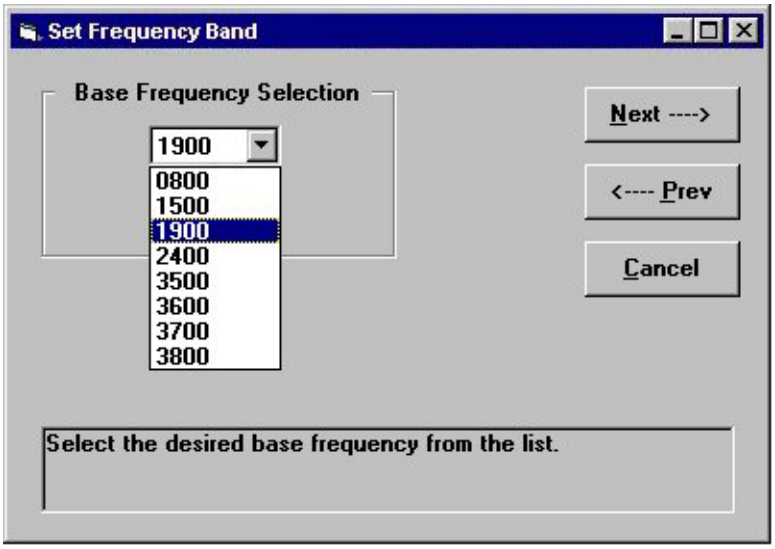


Figure 2-9: Set Frequency Band Pop-up Window

Select the desired base frequency from the Base Frequency Selection pane.

18. Press the Next button to display the Communication Port pop-up window:

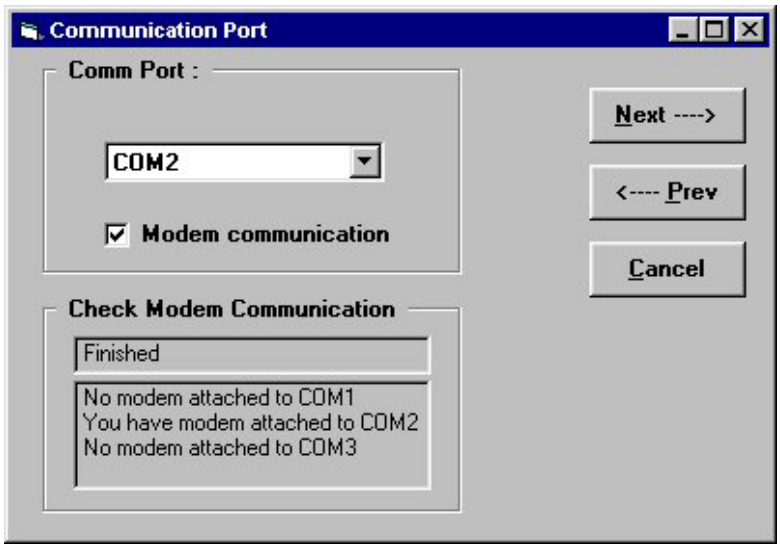


Figure 2-10: Communication Port Pop-up Window

Select the required communication port from the drop-down list box in the Comm. Port pane. Check the Modem Communication checkbox to enable remote communications. Modem communication is checked automatically and the results displayed in the Check Modem Installation pane.

19. Press the Next button to display the The End pop-up window:

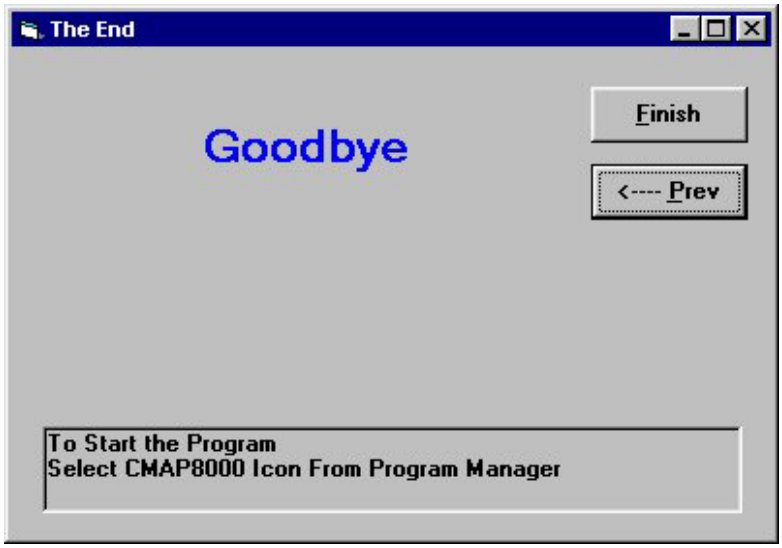


Figure 2-11: The End Pop-up Window

20. Press the Finish button to display the Installation Completed pop-up window:

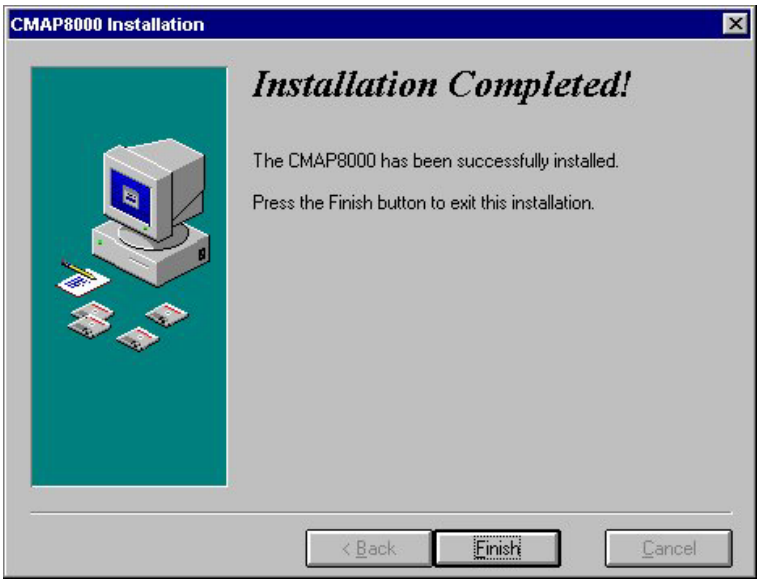


Figure 2-12: Installation Completed Pop-up Window

21. Press the Finish button to display the Install pop-up window:

Install
This system must be restarted to complete the installation. Press the OK button to restart this computer. Press Cancel to return to Windows without restarting.
OK
Cancel

Figure 2-13: Install Pop-up Window

22. Press the OK button to restart your computer and complete the CMAP 8000 installation.

R-MON Installation

To install R-MON:

1. Switch on your computer and wait for the Windows 95/98/ME desktop to appear.
2. Insert the CD in the appropriate drive.
3. From the Windows Taskbar click the **Start** button to display the **Start** menu.
4. Click **Run** to open the **Run** dialog window.
5. Click the Browse button to display the Browse dialog window.

6. From the “Look in” dropdown list, select the CD-Rom drive to display the CD file contents.
7. Select and open the RMON folder.
8. Highlight the SETUP.EXE file and click the **Open** button to return to the Run dialog window.
9. Click O.K. to initiate the installation wizard.
10. When RMON has been successfully installed, press the “Finish” button to exit the setup procedure.

Hardware Installation

When CAMP 8000 is operated independently of SMAP (SuperOfficeMap), the PC is permanently connected to the J-15 connector or J13-A located on top of the RPCU. This connector can also be used for modem connection and for RS-485 daisy chain. For further information, refer to the MGW Installation Manual.

If CMAP 8000 is operated with SMAP, the SMAP is connected to the J-13A connector and the CMAP 8000 can be connected either directly to the NMI card (local front panel access) or J-15, via local RS-232 or modem, as shown below.

RMON is connected to J4 (main MPM-A) or J5 (redundant MPM-B).

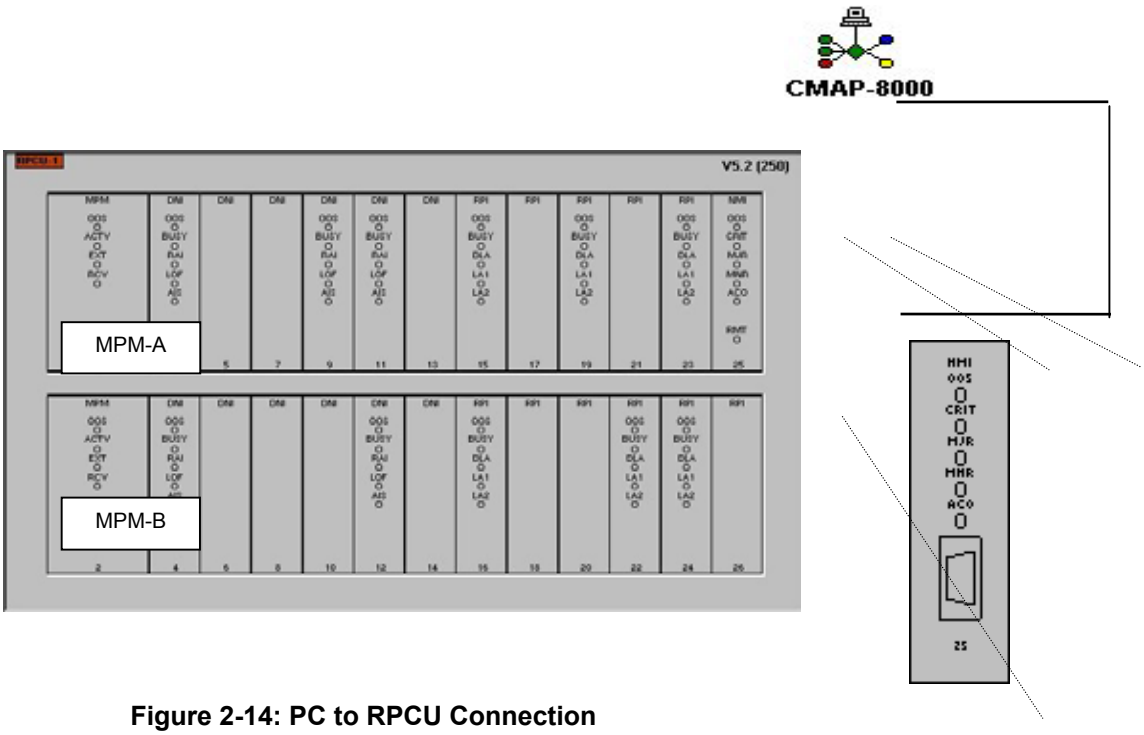


Figure 2-14: PC to RPCU Connection

The PC RS232 serial ports are connected to the front of the NMI and MPM cards using Cables #3 and #4 respectively (see Appendix A). PC serial ports (COM1 and COM2) can be used for this purpose.

NOTE

This connection is a temporary measure for maintenance purposes only. The box remains open and is exposed to RFI and heat dissipation.

3

Chapter 3 - Operation

In This Chapter

- Getting Started, page 3-2
- Screen Descripton, page 3-5
- Screen Management, page 3-8

Getting Started

To start with CMAP 8000:

1. Make sure that your PC is running under Windows 95/98/ME.
2. Double-click on the CMAP 8000 icon to run the CraftMap program and display the LOGIN pop-up window:

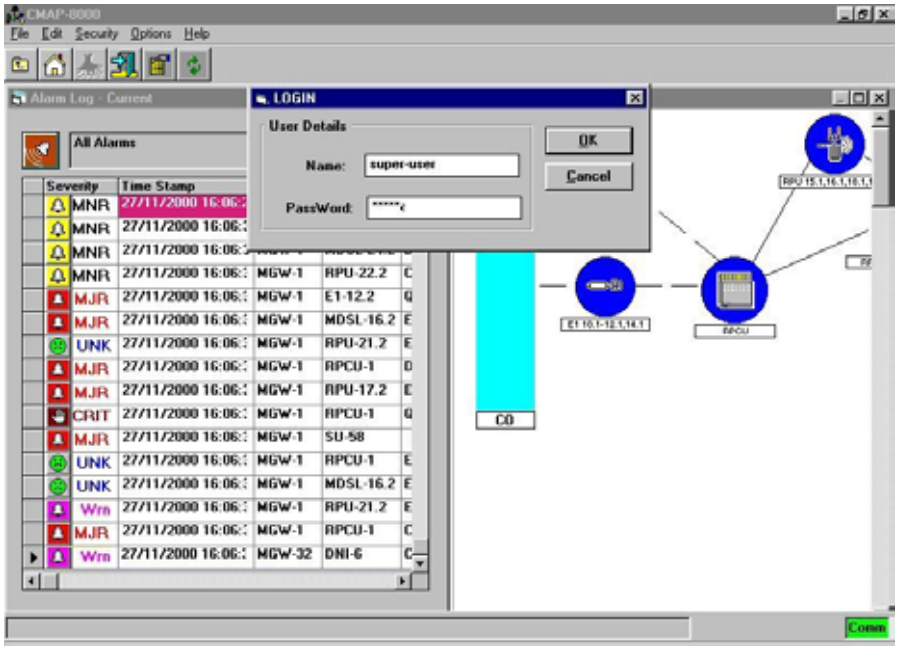


Figure 3-1: CraftMap Logo - Opening Screen

3. To initiate CraftMap use Alvarion's preset *User Name* and *PassWord*, namely: SUPER-USER and ENTER respectively. If you make an incorrect entry, the CraftMap Message pop-up window will display:

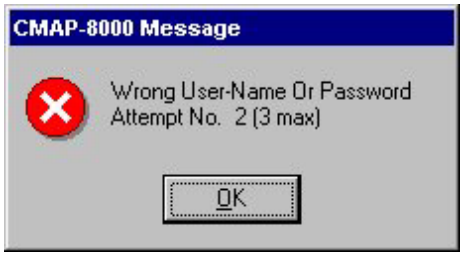


Figure 3-2: CraftMap Cautionary Message

CAUTION

The user is allowed three attempts. If the third attempt fails, the CMAP automatically logs out

The system's supervisor should change the PassWord immediately using the Security/Menu Access item..

4. Click the OK button to clear the LOGIN pop-up window and display the CMAP-8000 full screen:

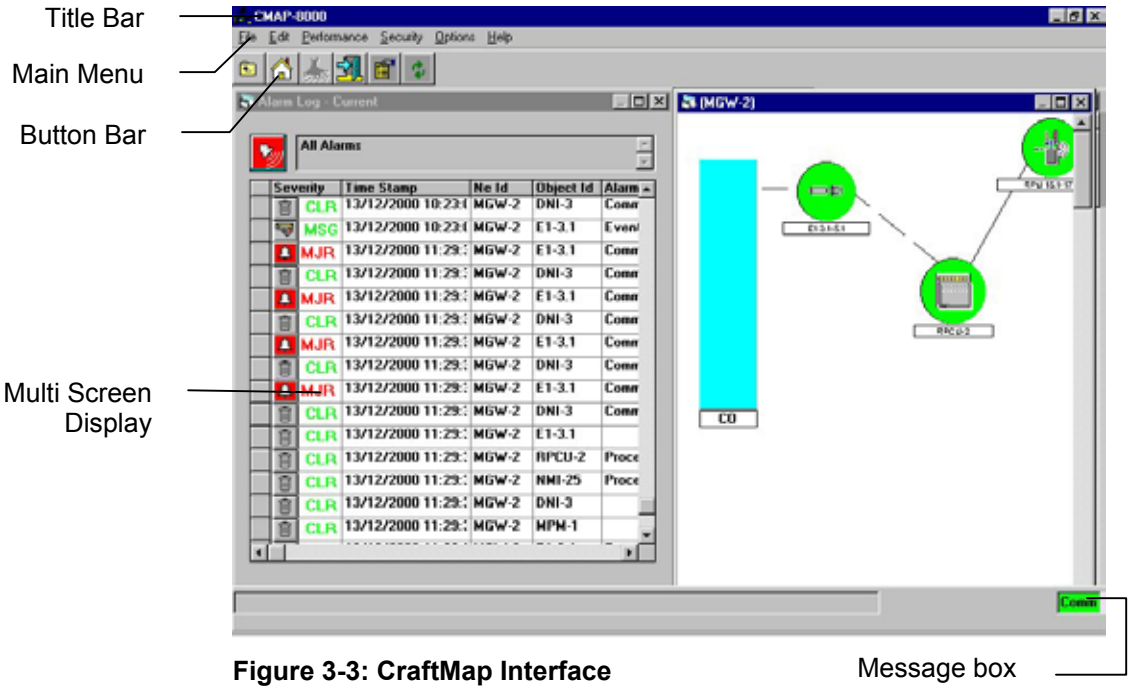


Figure 3-3: CraftMap Interface

If the Login procedure is incomplete (the operator cancels or Logout), only File, Edit, Security and Help menu items are enabled. The CMAP allows monitoring of the three types of system intra-network links:

E1, MDSL and Radio (see Figure 3-4).

The three type of intra-network links are shown in the annotated screen below:

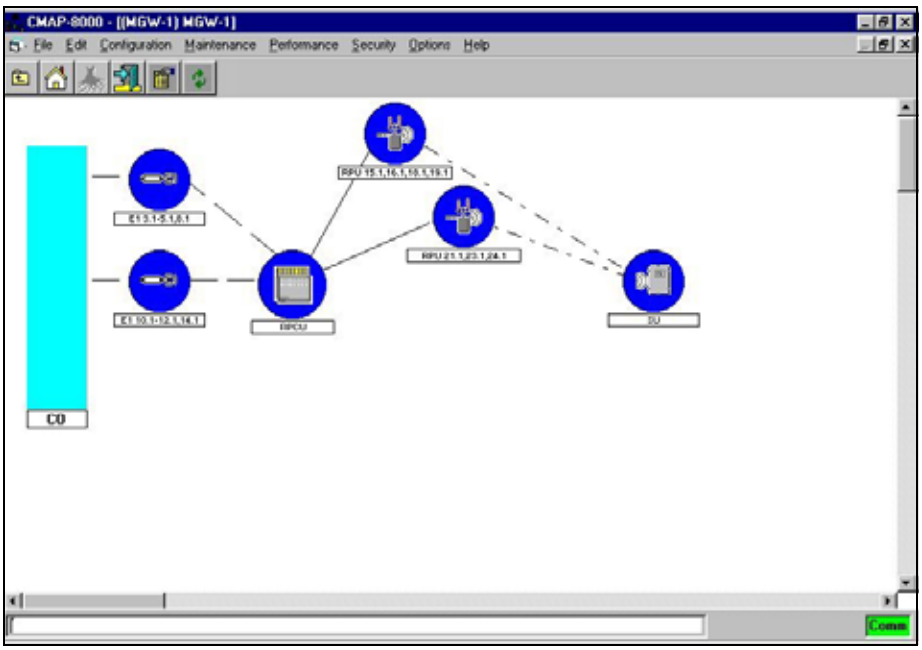


Figure 3-4: Annotated CraftMap Interface

Screen Description

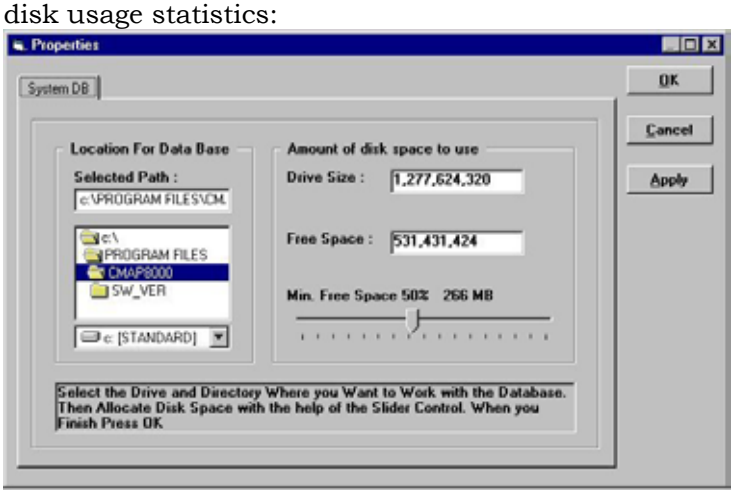
The CMAP-8000 CraftMap interface (Figure 3-4) comprises the following elements:

- Title Bar: The Title Bar displays the CMAP-8000 CraftMap identifier
- Main Menu: The menu items displayed (and available) are dependent upon the currently active screen.
- Command button bar: The command button bar functions are defined as:

Table 3-1: Command Button Bar Functions

Command	Function
Back	Access up to three active screens
Home	Display user's home map selection
Root	Display system root map (Future)
Exit	Alternative to Main Menu File/Exit item

Table 3-1: Command Button Bar Functions

Command	Function
Properties	Click to display the properties window with data base location and disk usage statistics:  **Figure 3-5: Properties Window** The properties window, incorporating the System DB frame, allows the user to select the path for the location of the CMAP 8000 working database, as well as allocate the appropriate disk space. User instructions are spelt out at the bottom of the window. If the allocation limits are exceeded during system operations, the user is alerted by an appropriate screen message display:
Refresh	Click to refresh active window. If another window is selected, click the Refresh button accordingly.

- **Multi screen display**: Initially two screens are displayed in this area: the Main Map on the right and the Alarm Log on the left.

NOTE

Clicking on the header bar of each split screen will display the distinct menu bar of the respective split screen.

During operations, the user will have occasion to enter or modify new or existing data. Interactive screens (pop-up windows) are called up for this purpose. The pop-up windows superimpose on the split screen. An example of a pop-up window is shown below.

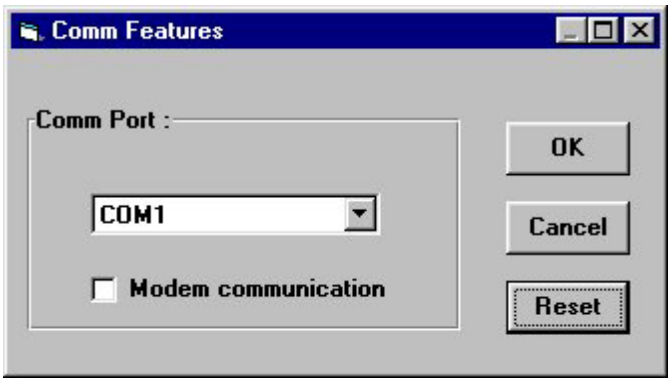


Figure 3-6: Comm Features (example)

Exit pop-up windows via one of three paths:

Path	Press...	To...
1	OK	Display the CMAP "Accepted" message and click the OK button to return to the previous screen.
2	Cancel	Return to the previous screen and cancel any changes.
3	Reset	Reset parameters as were and click the OK button to return to the previous screen.

- **Message box**:CraftMap communication status is given in the message box at the bottom right-hand corner of the screen as follows:

  Black foreground, green background ⇒ NMI card connection confirmed.

  Black foreground, red background ⇒ No NMI card connection.

NOTE

When initiating the CraftMap, wait for confirmation of NMI card connection, which takes a few seconds to stabilize.

Screen Management

Basic screen management:

- Click the button in the top right hand corner to minimize screen window.
- Click the button to close the session and exit the screen
- Click the button in the top right hand corner of the screen to convert the main screen to the CMAP8000 icon in the Windows task bar. Click the icon to restore the Main Screen.
- Click the button in the top right hand corner of the screen to maximize screen size.

Menu items can be activated either by:

1. Clicking the menu item, or
2. Pressing the Alt key and the underlined letter in the item (e.g., Alt+C, to open the Configuration sub menu).

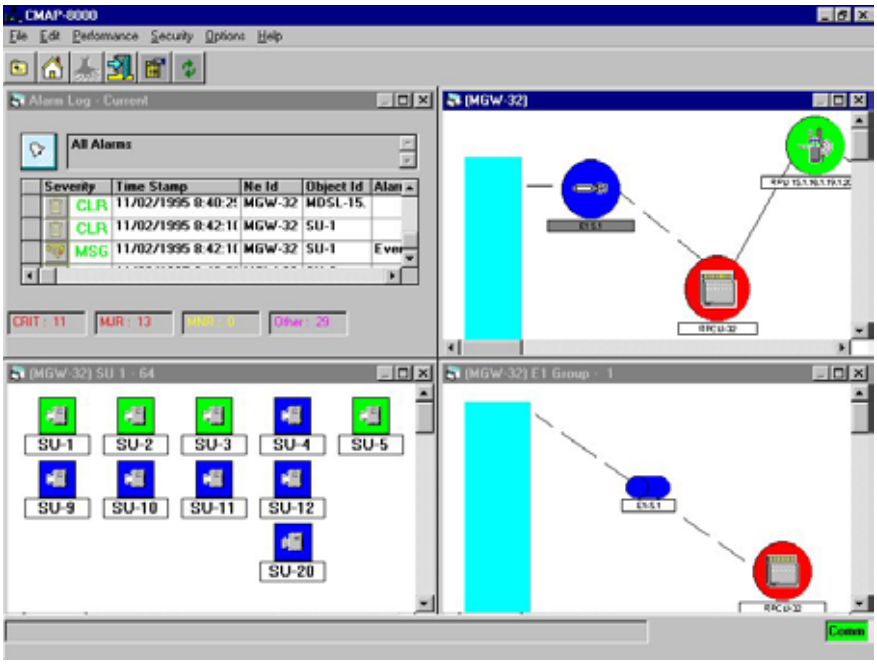


Figure 3-7: Typical Multi Screen Display

NOTE

To reduce the 4-screen display to three or less, double click the Close button of a given screen to close the respective screen and obtain a 3-screen display, etc.

When a new screen is opened, it occupies the whole multi-screen display area.

Press the button to the right of the Menu bar to display the original two screens and the new screen.

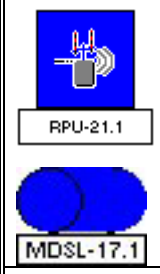
Attempting to close down a locked screen (see Map Menu → Edit item) will display the following message:

Figure 3-8: CMAP-8000 Message

In order to unlock a locked screen, the user must click the Edit item in the Main Menu, and click the Lock window menu item.

Main Map objects are displayed according to three basic shapes, examples of which are shown below:

Table 3-2: Examples of Main Map Objects

Object	Definition
	Lowest graphic display level.
	Upper map graphic display level (group representation); double click on the object to display lower graphic display level.

A single click on an object will produce a gray background to the item name, indicating that the given object has been selected. The map menu will display the enabled menu items accordingly. The object is unselected by clicking the object or, clicking another object on display.

The objects are colored according to their respective alarm status:

Table 3-3: Alarm Status Colors

Color	Status
Green	All clear
Red	Major
Crimson	Critical
Yellow	Minor
Purple	Warning
Blue	Unknown

The color of the RPCU object indicates the system's operating alarm status based on the NMI LED's.

If the upper-level object is colored green, all subsidiary items will also be colored green. However, if the upper-level object is colored red, subsidiary objects can be colored in alternative colors, e.g., blue. Therefore, all objects colored other than green should be double-clicked in order to verify the alarm status of subsidiary objects.

The network item identifiers[3] are defined as follows:

- RPU/RPC's are identified according to the related MDSL. For example, MDSL 15.1 describes an MDSL located in Slot No. 15 while the numeral "1" (after the period) indicates the MDSL Port No. on the card located in Slot No. 15.
- E1 3.1 is explained as follows: the numeral "1" indicates that the E1 is connected to Port No. 1 of the DNI card, which is located in Slot No. 3 of the RPCU.
- The AIU is identified according to the related E1 with respect to the slot number.

If an item represents a range of E1, this is indicated by E13.1-5.1, equivalent to E1 3.1, 4.1, 5.1.

Double click on a round-shaped item e.g. E1 3.1-5.1,8.1 (Figure 3-4), to display the lower map level:

[3] Typical numbering to illustrate CraftMap object display.

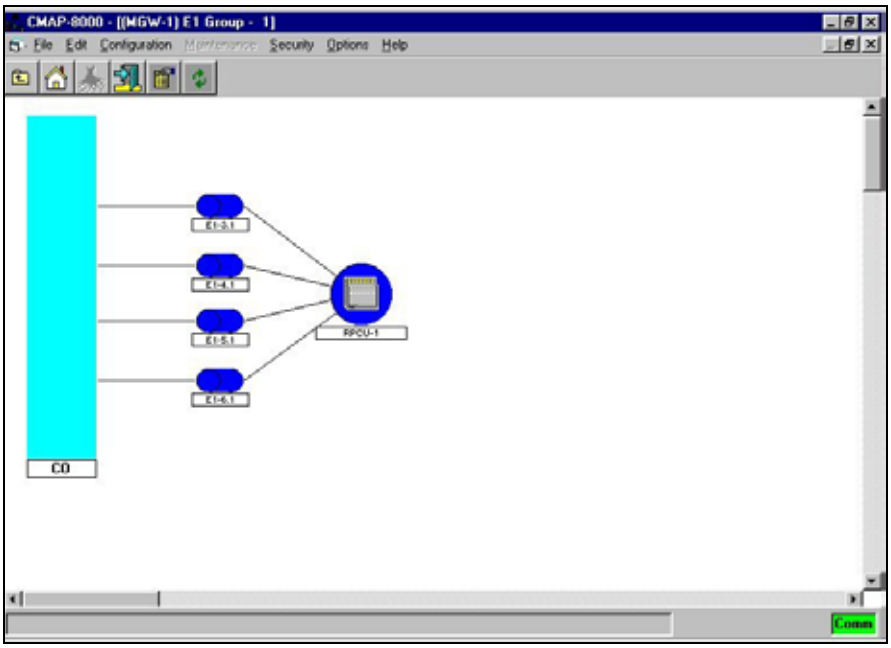


Figure 3-9: CraftMap Interface - E1 Group Sub-map

Press the “Root” command button to return to the MGW-1 Main Map display, or press the button to reduce the window to its default size.

4

Chapter 4 - System Workflow

In This Chapter

- General Description, page 4-2
- Detailed Description, page 4-4
- RPCU Configuration, page 4-9
- RPU/RPC Provisioning, page 4-21
- Subscriber Unit (SU) Definition, page 4-24

General Description

The systematic provisioning of new subscribers over the MGW system is described below in the form of step-by-step instructions for installation personnel, system operators and managers. The provisioning is carried out prior to the physical installation of the FAU at the customer premises.

This note is intended for use in all markets (ROW) except for the US market.

Applicable Software Packages

The following software tools are required for implementation of the MGW system:

- CraftMap (CMAP) package running on a PC at the RPCU site and used for provisioning the system
- HFIT 2000 used for installing an FAU.

NOTE

Some of its functions can be viewed via the CMAP 8000 by highlighting an RPU/RPC icon and selecting the Performance>Statistics menu item on the Main Menu bar.

The HFIT 100 is a simple and easy to use tool for installing, configuring and monitoring the FAU.

Principal Stages

The principal stages of the process of system operation are:

A. End of Mechanical Installation

B. Power turn on

C. Check for Equipment Synchronization

D. CMAP 8000 Operation

E. RPCU Definitions

F. RPU/RPC Definitions

G. Subscriber Unit (SU) Definitions

H. GSS Operation (Option)

Refer to Table 4-1.

The following table represents the process of operating the MGW system. Each stage is elaborated upon in the respective section.

Table 4-1: Stages of MGW System Implementation

Implementation Stage	Page
End of Mechanical Installation	4-4
Power Turn on	4-5
Check for Equipment Synchronization	4-6
CMAP Operation	4-7
Equipment Definitions	4-8
RPCU General Definitions	4-9
Cards Modifications	4-12
RPCU Parameters	4-17
Clock & Time	4-18
RPU Definitions	4-22
SU Definitions	4-24
Create	4-25
Assignment	4-26
Registration	4-29
Parameters	4-35

Detailed Description

End of Mechanical Installation

Before turning on the system, a final inspection of the mechanical installation is required in order to prevent possible damage to the equipment.

Installation of the RPU/RPCs should be verified according to the network plan as issued by Alvarion or another certified team. The installation of each RPU should be accompanied by exact and careful registration of the RPU/RPC and its sector together with the respective appearance of its MDSL on the MDF. Connection of the RPI to a given RPU/RPC should also be registered in order for the correct RPU/RPC details to be recorded and the correct phase assigned.

CAUTION

Special attention should be given to connecting the DSL between the RPI and RPU/RPC, and to DC voltage polarity.

The site installation should be inspected according to a visual test procedure. The procedure should include a pre-prepared checklist.

The PC, where the management network (OMAP or CMAP) application is installed, should be connected to the RPCU via J15 (RS232 NMI). For CMAP connections, refer also to TN#1010C.

The DipSwitch number eight of SW1 in the RPCU shelf should be set to the "CLOSE" position (Master). All other DipSwitch setting are according to the "MAP Address Setting" in the MGW Installation and Maintenance Manual.

For local operations, a CMAP 8000 can also be connected directly to the NMI card. See also ERN# 1060.

Make sure that the correct COM port is connected as described in Appendix B.

Equipment Synchronization

Power Turn On

Activate the CMAP 8000 by double clicking on its icon.

When the RPCU and other units are turned on, a phase of self-tests and synchronization is initiated. When the tests are over, the various LED indicators will respond as detailed in Table 4-1 below.

Table 4-2: LED Indicators Status

	RPCU				AIU				GSS	
Function	**MPM**	**DNI**	**RPI**	**NMI**	**2W EXCH**	**CPU**	**PS**	**MIT**	**GPS**	**GTU**
OOS		OFF	OFF	OFF		OFF		OFF		
ACTV	FLASH									
EXT CLOCK	OFF									
RCV CLOCK	OFF									
BUSY		ON*	ON							
LOF		OFF								
RAI		OFF								
AIS		OFF								
DLA			OFF							
LAI			OFF							
LA2			OFF							
RMT				FLASH						
CRIT				OFF						
MJR				OFF						OFF
MNR				OFF						OFF

Table 4-2: LED Indicators Status

	RPCU				AIU				GSS	
ALARM					OFF					
AIS						OFF				
LOF						OFF				
LOMF						OFF				
RAI						OFF				
+5V							ON			
-5V							ON			
RINGER							OFF			
-48V							ON			
MAJ								OFF		
MIN								OFF		
ACO								OFF		
POWER									ON	ON
STATUS									ON	

* The DNI-2 card indications are similar except for the busy (flashing) LED.

Check for Equipment Synchronization

All LEDs on the DNI cards turned off, except for the green LEDs, indicates synchronization of the RPCU and L.E. or Interfacing Units is completed. The cards are then synchronized with the E1 interface, either the interface directly connected to the Local Exchange (V5.2) or that connecting it to an interfacing unit: AIU-120 or DIU.

If the AIU-120 is in use, the red LEDs on its CPU card should be also turned off when synchronization is obtained.

The RPCU clock and time source is revised later - see *RPCU Configuration*

Miscellaneous

A. The CPU card in the AIU-120 can connect up to four E1 interfaces to the RPCU (four different DNI cards). If all four interfaces are not used, the red LEDs of the unused interfaces will be on, indicating a false alarm. To prevent this false alarm, a loop on the respective unused connector should be wired.

B. At this stage, the synchronization between the RPCU and the RPUs is deferred to a later stage. Meanwhile, the LEDs on the RPI cards remain in the Off state (refer to section *RPU/RPC Provisioning* - DSL Definition (d) below).

C. To reset the NMI card, communications between the RPCU and the CMAP are suspended briefly.

D. The MIT card in the AIU-120 is used mainly for equipment definitions.

CMAP Operation

When activating the CMAP, observe the COMM message, in the lower right corner of the screen. It should be lit in green. If not, check the various physical connections and select the **Options** item on the Main Menu bar to define the required communications parameters.

A New RPCU

Maximize the MGW System screen. If the screen displays the Local Exchange (C.O.), the RPCU and the SU elements (a new RPCU). Proceed in section *Equipment Definitions*.

More objects are displayed implied that the RPCU was transferred from another installation and previous definitions should be deleted. In this case proceed to section *RPCU Relocation* below.

RPCU Relocation

Highlight the RPCU icon. From the Main Menu bar select **Maintenance**>**Initialize DB**. In the dialog box select **Reset All** and click the **OK** button.

Proceed to *Equipment Definitions* below.

Equipment Definitions

The provisioning and definitions of the various components of the MGW system is the core of this stage of the process. This part comprises the following phases that are described in the respective paragraphs:

1. RPCU definitions:
   A. RPCU Card Setup
   B. Card Modifications
   C. RPCU Parameters
   D. Clock source and time
2. RPU/RPC definitions
3. Subscriber Unit (SU) definitions

The above stages are elaborated in the next section.

RPCU Configuration

RPCU Slot Configuration

The card configuration of the RPCU is selected from one of several predefined configurations. Select the **Configuration>Provisioning>RPCU card and interface setup** option:

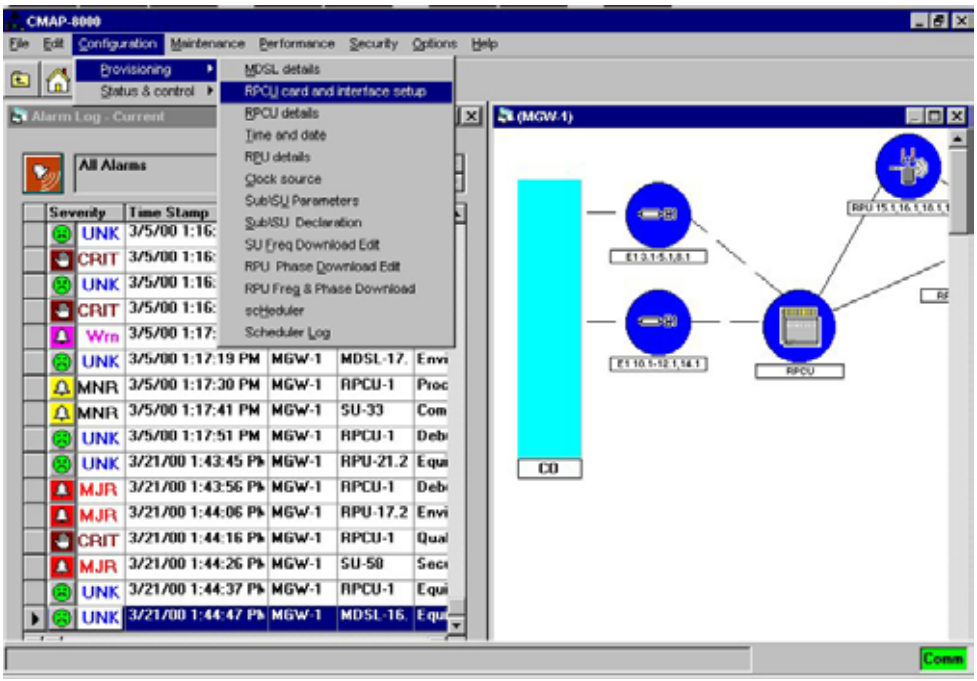


Figure 4-1: RPCU Predefined Configuration

Configuration & NIT Selection

Activate the above selection to display the RPCU slot configuration dialog box, enabling selection between four predefined configurations (see Figure 4-2 overleaf).

Select the required configuration from the four optional predefined configurations, as shown on the Configurations box on the left. Mark the selected NIT (Network Interface Type) from the E1 Interface box on the right.

If the selected NIT is V5.2 or V5.2M, then provisioning is required - Section *V5.2 Provisioning* below.

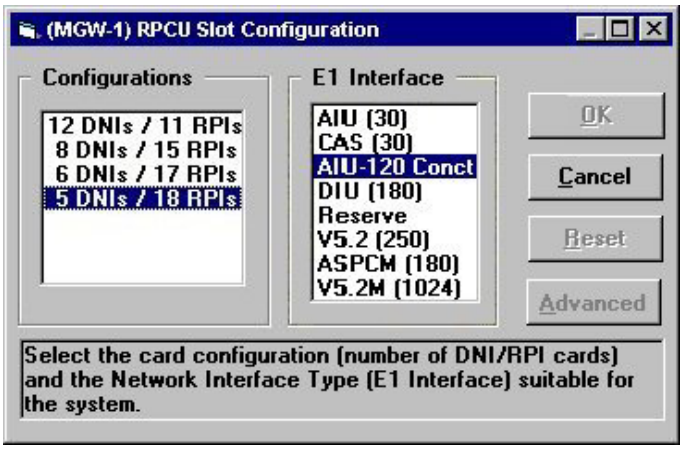


Figure 4-2: RPCU Slot Configuration Dialog Box

V5.2 Provisioning

Single E1 Interface

To provision the V5.2 interface, highlight the required E1 icon on the E1-GROUP view, select CONFIGURATION, PROVISIONING and then V5.2 - see Figure 4-3 below:

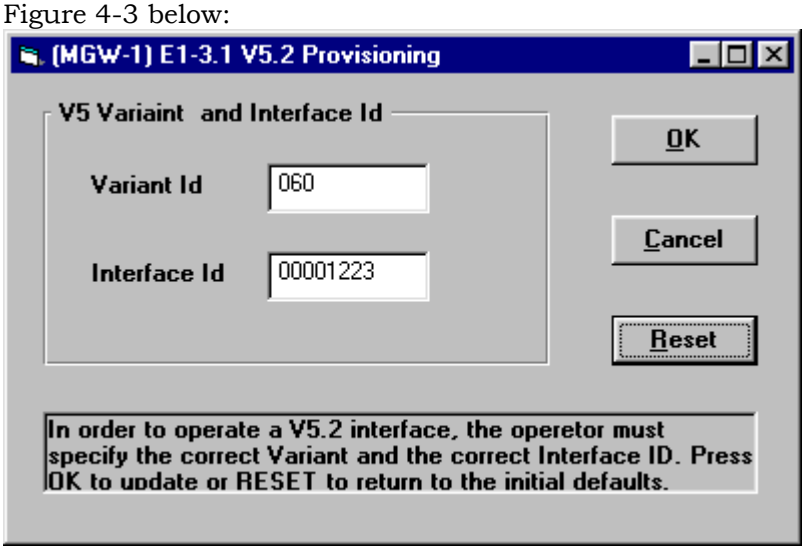

(MGW-1) E1-3.1 V5.2 Provisioning
V5 Variaint and Interface Id
Variant Id
060
Interface Id
00001223
OK
Cancel
Reset
In order to operate a V5.2 interface, the operetor must specify the correct Variant and the correct Interface ID. Press OK to update or RESET to return to the initial defaults.

Figure 4-3: V5.2 Provisioning Dialog Window

Fill in the VARIANT ID and the INTERFACE ID fields.

Multi E1 Interface

To provision the multi V5.2 interface, highlight an RPCU object and click the Configuration>Provisioning>Multi V5.2M item to display the Multi E1 V5.2 Provisioning pop-up window:

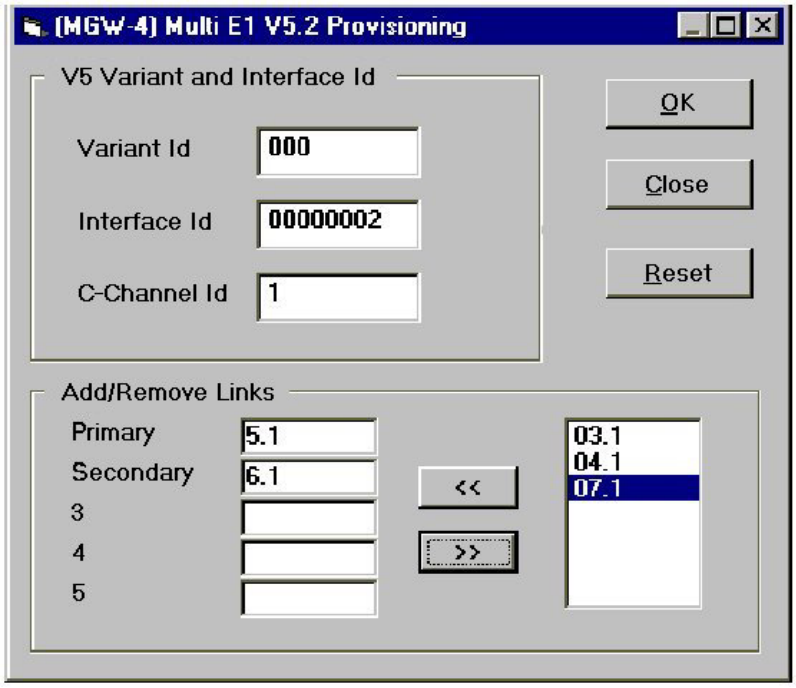


Figure 4-4: Multi E1 V5.2 Provisioning Pop-up Window

To activate a multi V5.2 interface, enter the appropriate Variant ID, Interface ID and C-Channel ID in the respective boxes, and then proceed to the Add/Remove Links frame (see Figure 4-4) to provision the Primary, Secondary and Regular E1 links.

RPCU Card Changes

Card Definition

In order to define the RPCU first define the RPI and DNI cards. Double click the RPCU object in the main map to display the RPCU shelf, with two cards only: the MPM and the NMI:

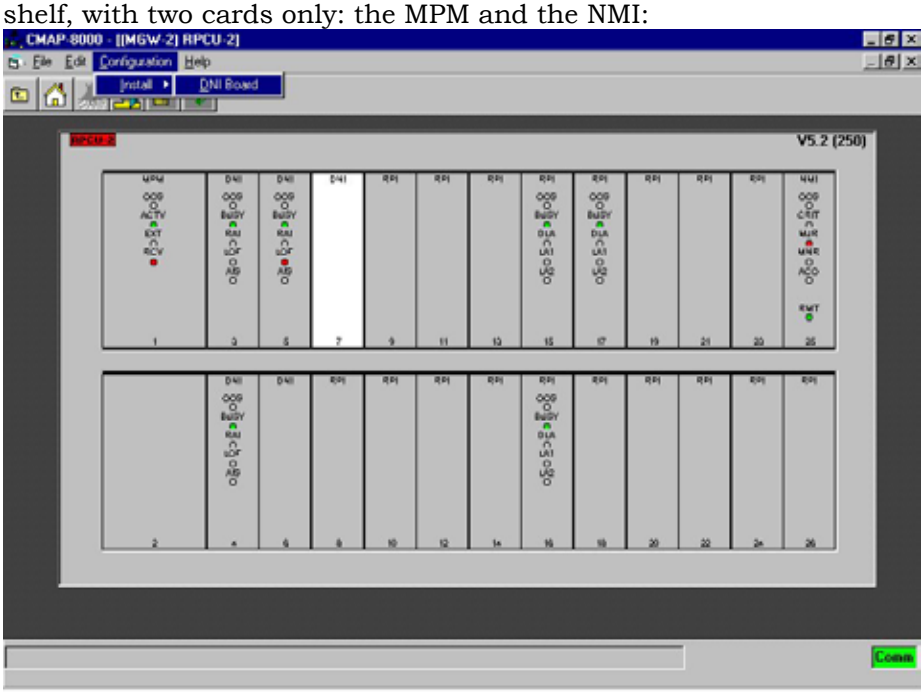


Figure 4-5: DNI Card Definition

To begin card definition, click an empty card slot.

DNI Card Definition

To define a DNI card, click on the first card slot where an actual DNI card is installed. The card slot color is changed to white.

Click the **Configuration>Install>DNI Board** menu item (see Figure 4-5) to display the CMAP 8000 "Accepted" message dialog box. Click OK to confirm DNI card definition.

NOTE

The DNI card software should be upgraded to support V5.2 Multi E1.

NOTE

You are recommended to define the DNI cards according to their order in the RPCU shelf.

RPI Card Definition

Define an RPI card, for example, by clicking on slot 15, the first card slot where an actual RPI card is installed. The card slot color changes to white (see Figure 4-6).

Click the **Configuration>Install> RPI Board** menu item (see Figure 4-6) to display the CMAP 8000 "Accepted" message dialog box. Click OK to confirm RPI card definition.

NOTE

You are recommended to define the RPI cards according to their order in the RPCU shelf.

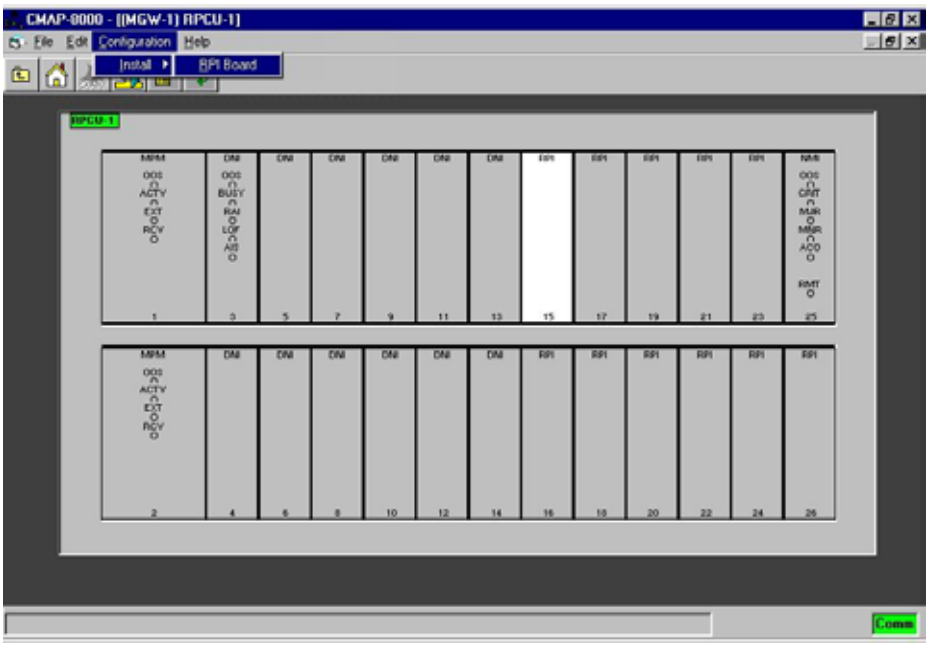


Figure 4-6: RPI Card Definition

Interface Cards

After configuration of the RPCU, it is sometimes necessary to modify unit composition, as not all of the cards are used or inserted. The procedure is the same for both DNI and RPI cards.

To delete a superflous card:

1. Double click on the RPCU icon on the main screen to display the RPCU shelf with selected configuration.
2. Highlight the card to be deleted - its colour is changed to white.
3. On the Main Menu bar select the **Configuration>Provisioning>Delete** menu item:

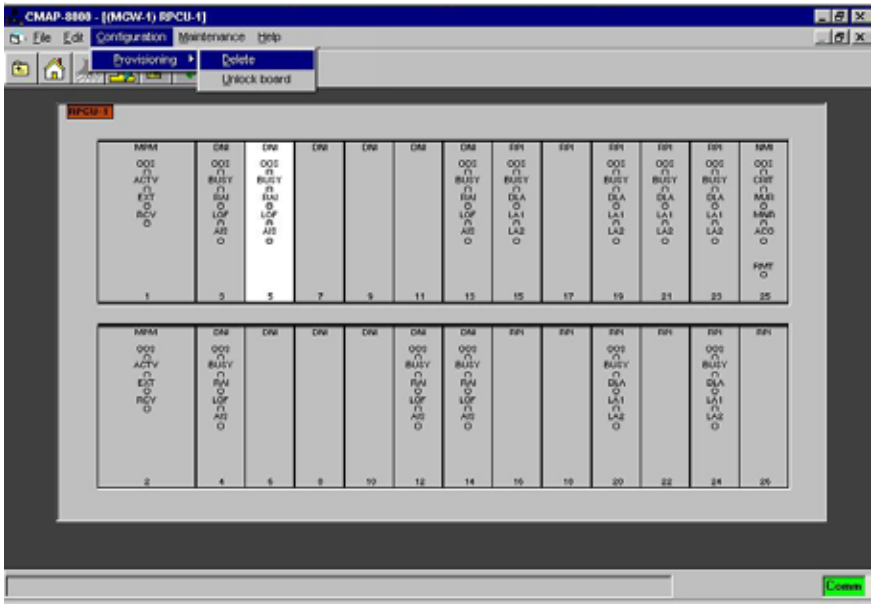


Figure 4-7: RPCU Shelf – Card Deletion

4. Selection of the **Configuration>Provisioning>Delete** menu item displays the warning message: Acknowledge by clicking OK on the Warning message:

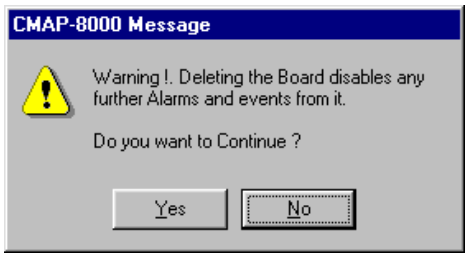

CMAP-8000 Message
Warning !. Deleting the Board disables any further Alarms and events from it.
Do you want to Continue ?
Yes
No

Figure 4-8: CMA 8000 Message

5. Click the Yes button to proceed.

IMPORTANT

It is highly recommended to verify the software version of each card by double clicking on it.

End Of Card Definition

After deleting all excess cards, click on the ROOT or HOME buttons on the main screen Toolbar to display the new network view, including the icons of the E1 groups representing the DNIs and the icons of the RPU groups:

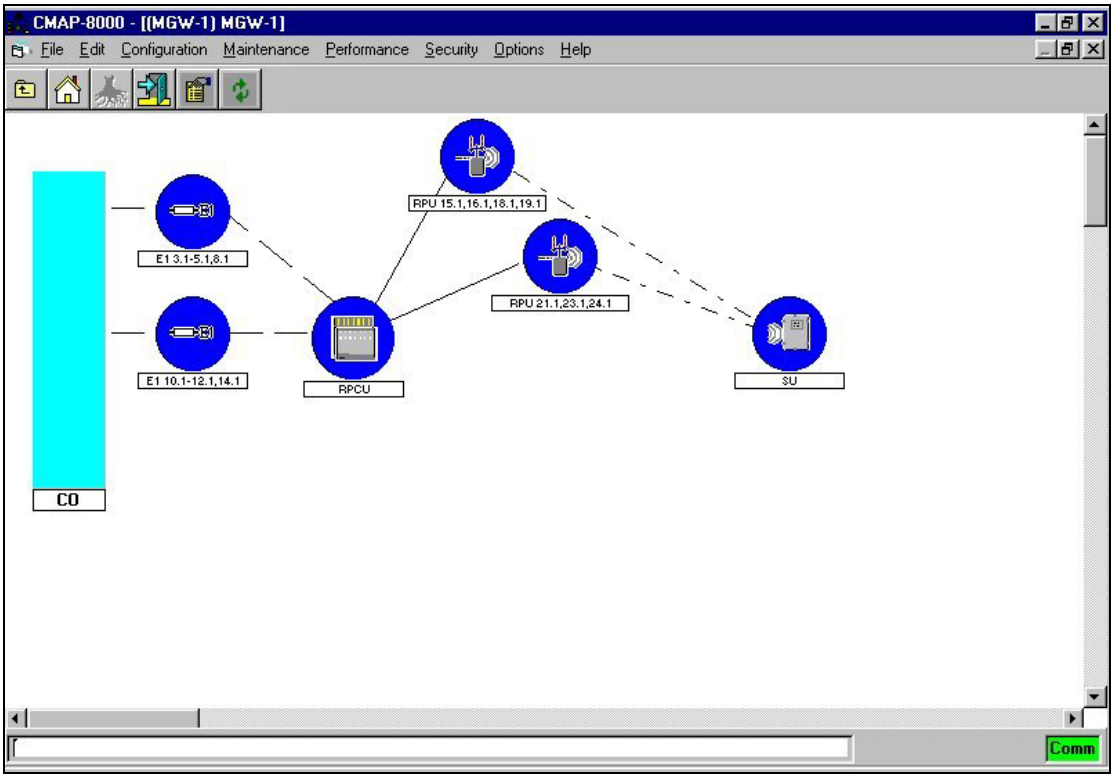


Figure 4-9: RPCU Network Map

NOTE

A circle symbolizes a group of up to four units.
The RPUs are coloured blue, indicating unknown alarm status.

The connections between the RPCU and the AIU and towards the RPUs are defined. The E1 to RPCU dotted line connection indicates that subscribers are not yet assigned.

MPM Redundant Definition

Definition of a redundant MPM card is optional at this stage. For a new RPCU, the second MPM card should be installed in slot # 2 prior to turning on. Upon turning on, the initialization process recognizes the existing second MPM card. Recognizing that the first card is active, the second card is kept in Stand By mode, otherwise the second becomes active.

With an operating RPCU, insert the redundant MPM card into slot # 2. Double click the RPCU icon and highlight the second MPM in slot # 2:

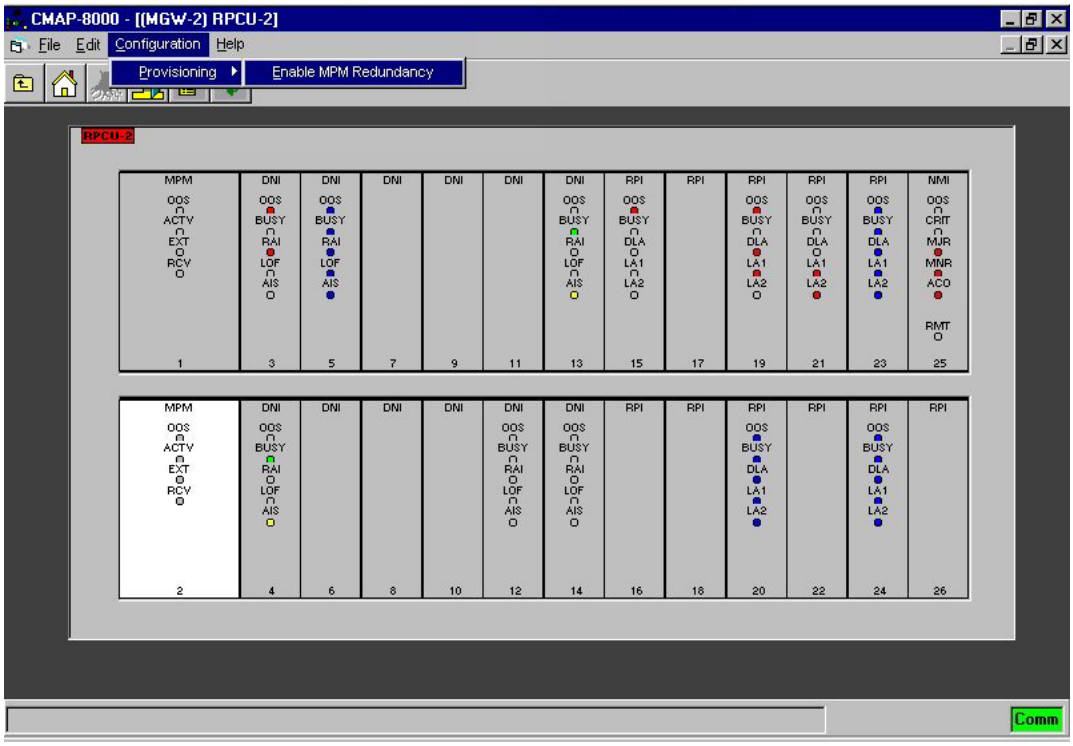


Figure 4-10: RPCU Shelf – Enable MPM Redundancy

Click the **Configuration>Provisioning>Enable MPM Redundancy** menu item to display the CMAP 8000 message:

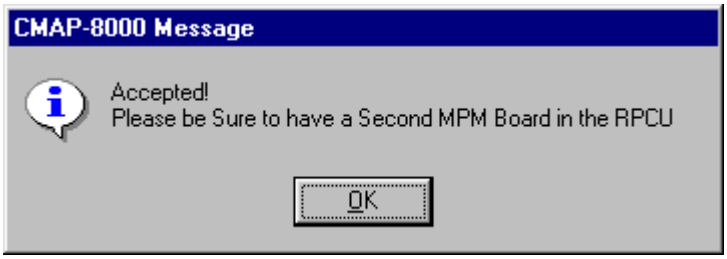


Figure 4-11: CMAP 8000 Message Window

Click the OK button to proceed.

RPCU Parameters

To define the RPCU Parameters:

1. The frequency sequence planned for the MGW system should now be loaded into the system.

IMPORTANT

The number (address) of the RPCU installed in the site is defined on the equipment itself by the DIPSwitch on the motherboard. This is carried out during installation. If the number has to be changed after operation, then the RPCU should be turned off and on again.

2. To define the RPCU, first click the RPCU object in the "RPCU Network Map." Define the Frequency band by selecting the **Options> Frequency band** menu item to open the Set Frequency Band dialog box:

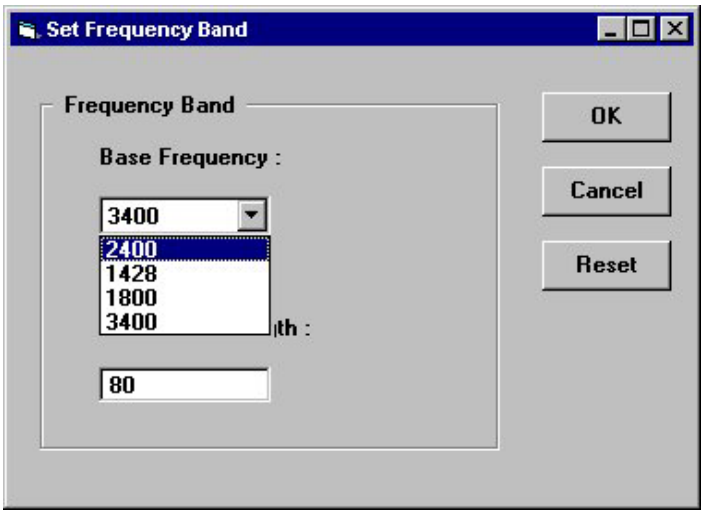


Figure 4-12: Set Frequency Band Dialog Window

3. Select the required band and OK to approve your selection.
4. Select the **Configuration>Provisioning>RPCU details** menu item to display the RPCU details dialog box:

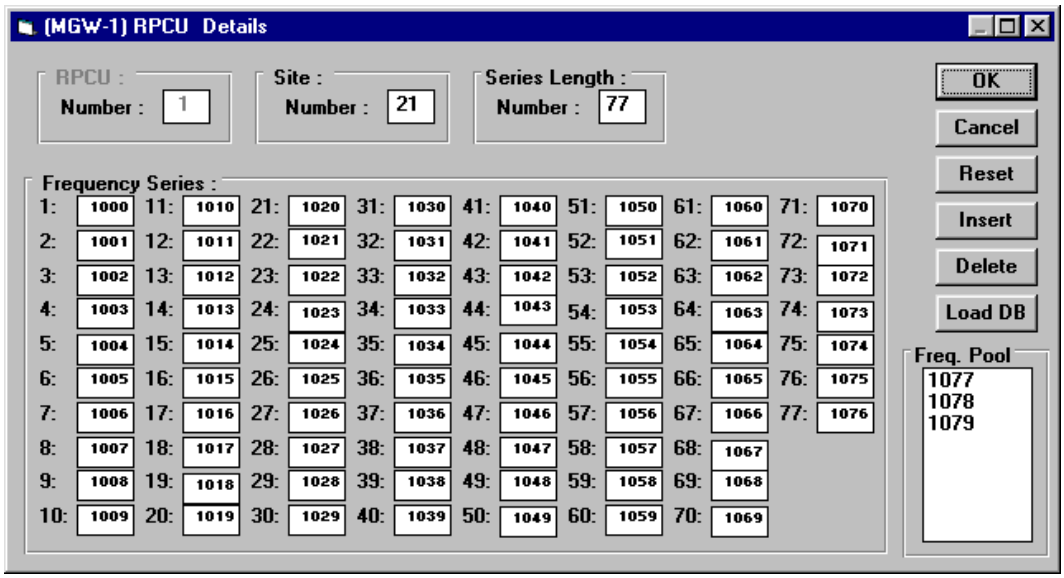


Figure 4-13: RPCU Provisioning Dialog Window

5. In the **RPCU Details** dialog box complete the required data and finally click the OK button.

6. Frequencies can be either typed into the **FREQUENCY SERIES** or dragged from the **FREQ. POOL** box.

NOTE

For 5) and 6), all parameters derive from the network planning stage, usually by the NIR tool. The RPCU number is already defined by the unit DIPSwitch.

7. The length of the sequence is usually 6 or 12 or 18 etc frequencies. It is not uncommon to find sequences lengths of 8 or 14 or 20 or more frequencies.

8. Click the OK button to accept the provisioning definitions.

MGW Clock

The synchronized MGW system can receive one of three clock sources:

- External GPS
- E1 trunk
- Internal

The priority of the source is determined by network planning considerations, including:

- A GPS unit on site receives highest priority

- If there is no GPS, and the connection to the L.E. is over digital interfaces (V5.2, DIU-180), E1 sources receive highest priority
- Otherwise, the Internal source receives priority

Besides the clock source, the time and date are set so that all alarm messages bear the correct time stamp.

NOTE

If the network comprises several cells (multi-cell configuration), then a GPS is required in every cell.

The RPCU clock source is defined in the following.

Clock Synchronization

Click on the RPCU object and select the **Configuration>Provisioning>Clock source** item from the main menu to display the RPCU – Clock Priority table dialog box:

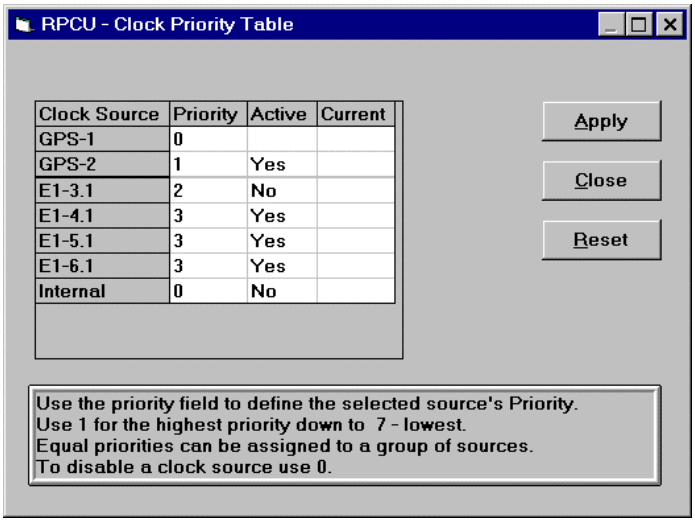


Figure 4-14: Clock Priority Table Dialog Box

Select the clock sources and the respective priorities, as required.

Time and Date

Messages from the RPCU to the CMAP are time stamped. To adjust the correct time and date, select the **Configuration>Provisioning>Time and Date** menu item to display the RPCU Time & Date dialog box:

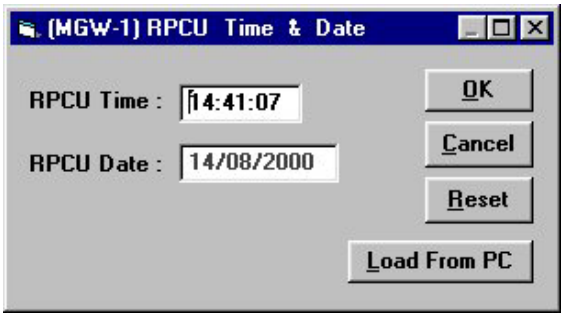


Figure 4-15: Time & Date Dialog Box

NOTE

dd/mm/yyyy hh:mm:ss

Enter the correct data.

RPU/RPC Provisioning

This phase comprises the allocation of RPU/RPC phase and sector number. All other parameters are received from the RPCU. As the RPU/RPC is not yet equipped (i.e. not powered), the RPU/RPC object at this stage is colored blue, indicating Unknown status.

Double click the RPU/RPC object in the main map to open the RPU/RPC group map:

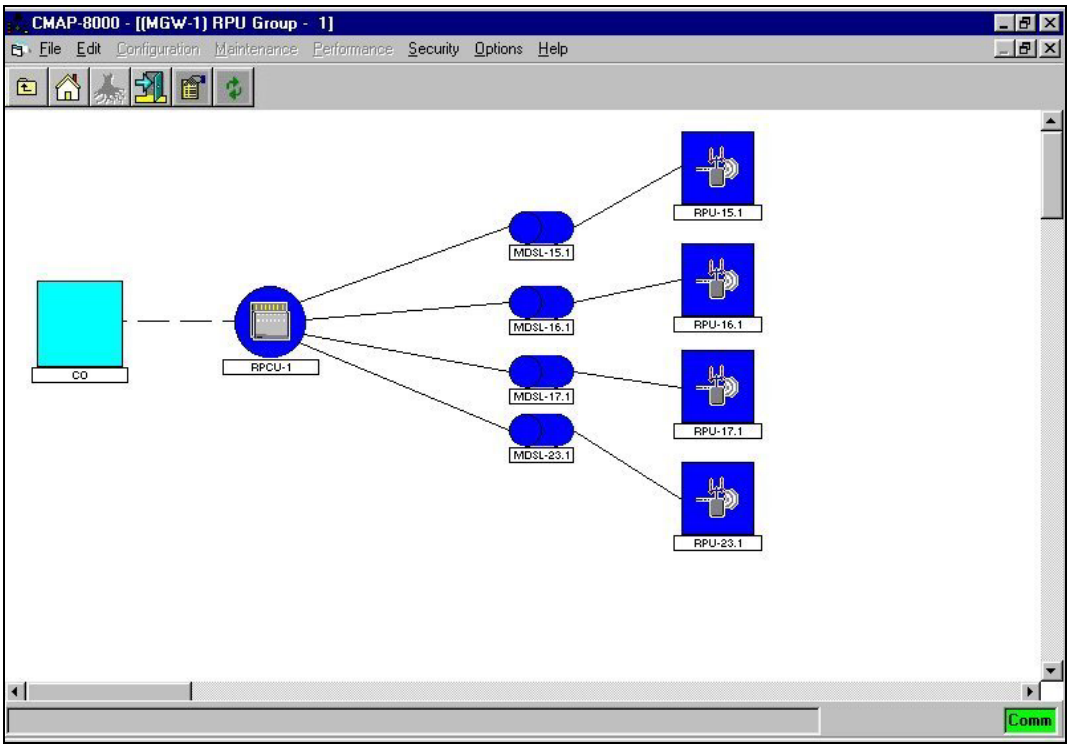


Figure 4-16: RPU/RPC Definitions

MDSLs and RPU/RPCs are shown, according to the defined number of RPIs.

RPU/RPC Definition

To define the RPU/RPC Parameters :

1. Highlight an RPU/RPC and select the **Configuration>Provisioning>RPU/RPC Details** menu item to open the RPU/RPC details dialog box:

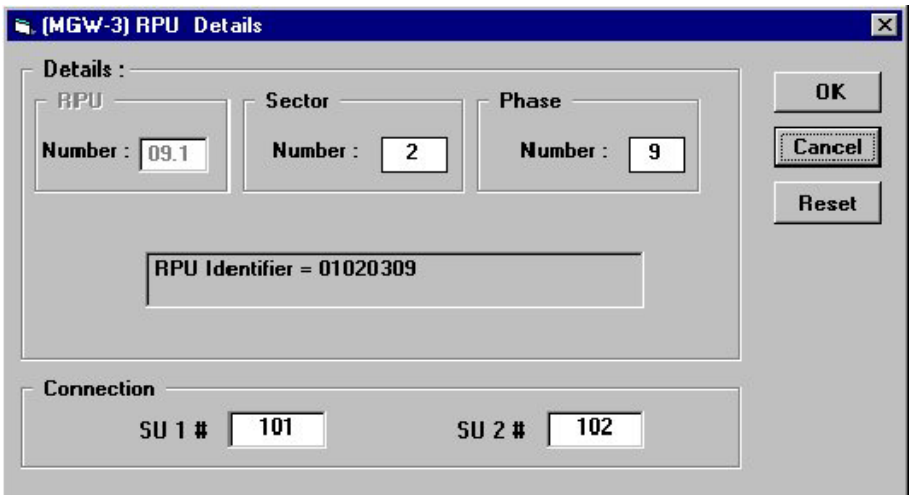


Figure 4-17: RPU/RPC Details Dialog Box

The appropriate RPU/RPC number is specified.

2. Sector number for PSTN subscribers: Enter the Sector and Phase Numbers, according to network requirements. You are recommended to number the sectors starting with the sector including north (azimuth 0°) and progressing in a clockwise direction. Enter the data with care in order to obviate possible future problems.

3. Sector number for ISDN subscribers: The FAU-i (ISDN service) tracks a specific RPU. To avoid the asterisks in the sector field of the Target ID number of the FAU, when the co-location feature is used, assign the "ISDN" dedicated RPU a virtual sector number. Each "ISDN" RPU must have a different virtual sector number.

4. The CONNECTION box is used with the BR-ISDN service. The numbers in this field are retrieved from the CREATE process - refer to AN #1066.

5. Note down the RPU/RPC Identifier number for future reference during FAU installation.

6. Click the OK button to display the CMAP 8000 “Accepted” message window and click OK to return to the RPU/RPC group window.

MDSL Definition

To define the MDSL Parameters:

NOTE

This stage is skipped by default. Apply only if the MDSl was previously disabled or after a new system has been configured.

1. Highlight an MDSL object and select the **Configuration>Provisioning>MDSL Details** menu item to display the MDSL Details dialog box:

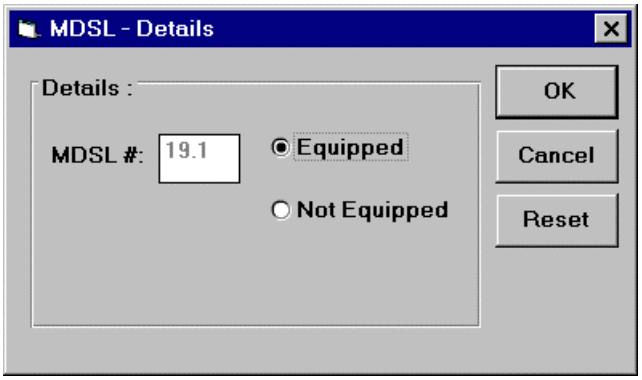


Figure 4-18: MDSL – Details Dialog Box

The MDSL number is specified.

2. Click the E**QUIPPED** radio button and click the OK button to display the CMAP 8000 “Accepted” message box. Click the OK button to return to the RPU/RPC group window.
3. The Busy LEDs on the RPI cards display a green light.
4. The MDSL and RPU/RPC objects are colored green, indicating C**LEAR** Status.

Subscriber Unit (SU) Definition

Sub/SU Declaration

The Sub/SU Declaration menu handles the configuration and provisioning of a single SU or a group of SU's.
Exit the RPU/RPC group map to return to the main map. Highlight the SU object and select the **Configuration>Provisioning>Sub/SU Declaration** menu item to display the Subscriber Allocation and SU Operations dialog box:

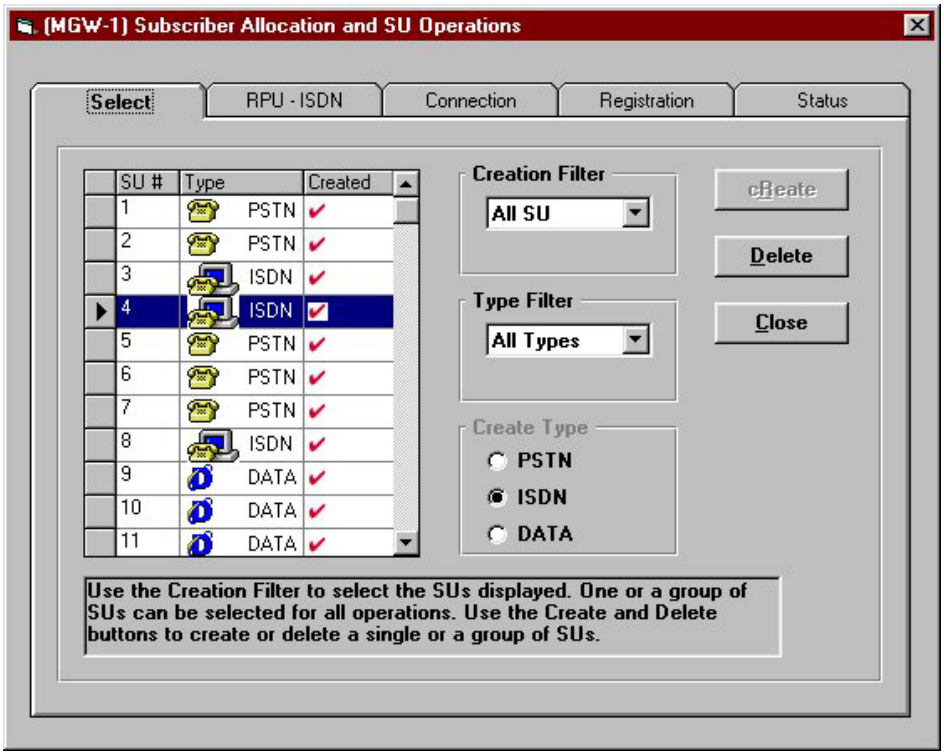


Figure 4-19: Subscriber Allocation and SU Operations (Select)

All subscriber definition operations are implemented within the above dialog box.

The screen has five tabs:

- Select – create new subscribers or delete existing SU.
- RPU-IDSN - assign SU to an RPU (ISDN Subscriber Units only)
- Connection - assign SU to C.O. trunks
- Registration - register SU
- Status - view SU status

Create

To create new Subscriber Unit elements:

1. click the SELECT tab to display the list of all possible SU numbers in Select mode. Proceed as follows:
2. In the CREATION FILTER box, select the NOT CREATED option and in the TYPE FILTER select the ALL TYPES option.
3. Choose a group OF SUs in the Group Selection box on the left**,** or select separate units by typing Y in the left column.
4. For creating PSTN, ISDN or DATA subscribers, check the respective CREATE TYPE radio button.

NOTE

If an ISDN subscriber is selected, the RPU-ISDN tab is enabled.

5. Click the **CREATE** button to confirm your selection.
6. To delete an SU or a group of them, select **CREATED** in step 1) and repeat step 2) above and click the **DELETE** button.
7. Note down the SU # for FAU installation.

RPU-ISDN Assignment

Click the RPU-ISDN tab to display the corresponding screen:

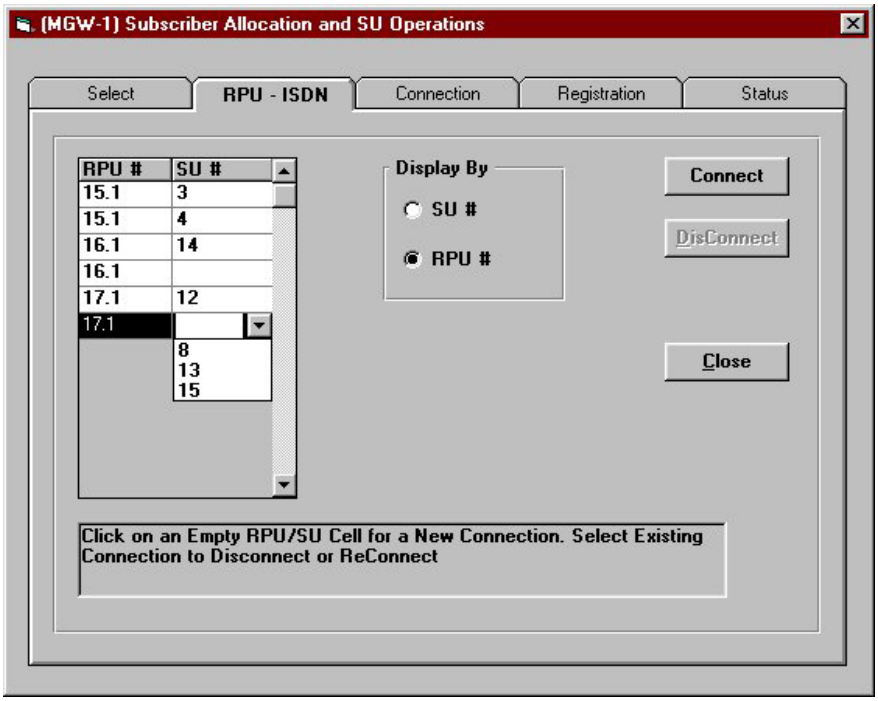


Figure 4-20: Subscriber Allocation and SU Operations (RPU-ISDN)

Check the DISPLAY BY RPU# radio button to view all RPU and the ISDN Subscriber Units to which they are dedicated. To assign a new SU# to an available RPU or to change an existing assignment, bring the cursor to the right corner on the field of the selected SU# and open the SU# pull-down menu (see Figure 4-20) and select the required SU#. Click the CONNECT button.

SU-CO Connection

To connect a Subscriber Unit (C.O. port assignation), click the CONNECTION tab.

The DISPLAY BY SU# is preferred for connection of a new SU or disconnection of existing SUs. The DISPLAY BY CO PORT is preferred for reconnecting an SU to another CO Port or disconnecting a given assignation.

Connection by SU#

To assign a Subscriber Unit by SU#:

1. Click the **CONNECTION** tab to display:

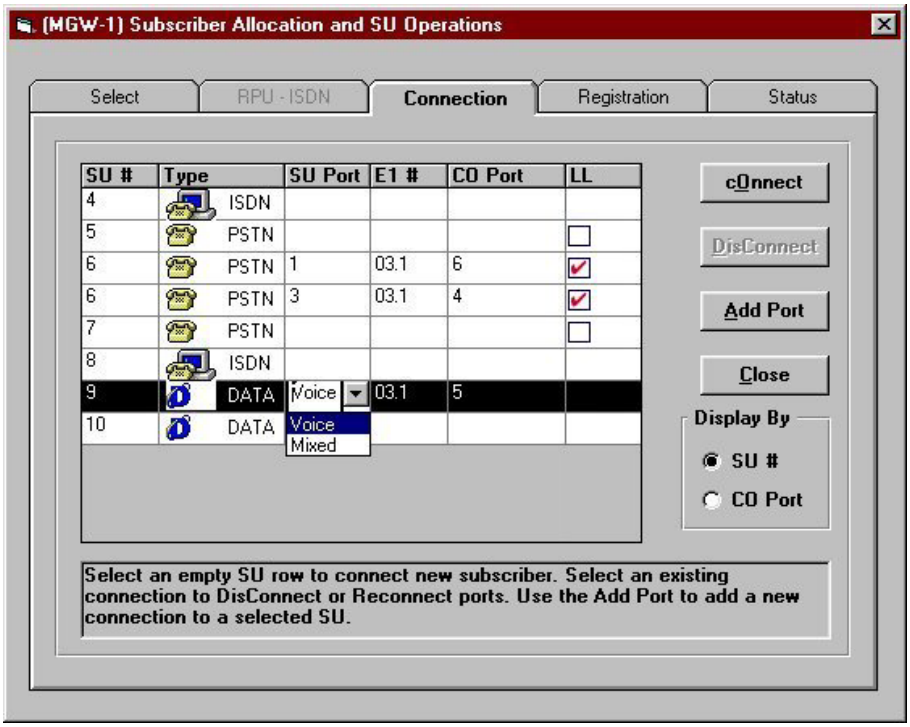


Figure 4-21: Subscriber Allocation and SU Operations (Connection I)

2. Check the DISPLAY BY SU# radio button to display all created Subscriber Units.
3. In the SU PORT field of a specified SU#, select the BRI option for ISDN SU.

   For PSTN SU, use the ADD PORT button and select an available SU Port.
4. Select a trunk in the E1# field.
5. Select an available port from the dropdown list in the CO PORT field.

   For PSTN subscribers, the available ports are from 1 to 214.

   For ISDN subscribers the available ports are from 215 to 250 only.
6. Check a checkbox in the LL field if required (PSTN ports can be assigned as Leassed Line users).
7. Click the cOnnect button to activate connection.

Connection by CO Port

To assign a Subscriber Unit by CO Port:

1. Click the **CONNECTION** tab to display:

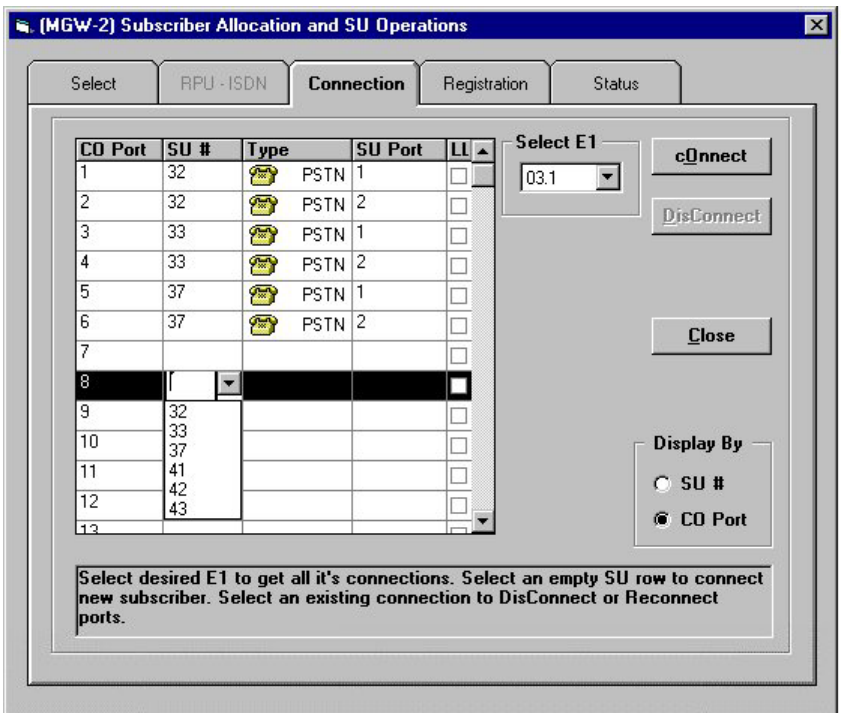


Figure 4-22: Subscriber Allocation and SU Operations (Connection II)

2. Check the DISPLAY BY CO PORT radio button to display all CO Ports together with the assigned SU#.
3. Select the required E1 from the SELECT E1 drop down list.
4. For PSTN subscribers, select from CO Ports 1 to 214.

   For ISDN subscribers, select between CO Ports 215 to 250.
5. Select an available SU # from the SU # field dropdown list for a given CO Port.
6. Select ISDN or PSTN in the TYPE field.
7. Select the BRI option for an ISDN SU or any SU Port for a PSTN SU in the SU PORT field.
8. Click the RECONNECT button to activate the assignment.

Registration

SU call establishment capability can be one of three states:

1. UNREGISTERED - the SU TID is not registered and not able to establish a call as the RPCU fails to authenticate SU identity (default status).
2. REGISTERED - the SU TID is registered and upon authenticating its identity, can establish a call.
3. BYPASSED - the RPCU does not attempt to authenticate SU identity. Nevertheless, it can establish calls, for example, during commissioning. When MGW anti-fraud capability is desired, the status should be changed to REGISTERED.

To manage call establishment and anti-fraud capability of the MGW system, select the REGISTRATION tab.

NOTE

When an SU is in ACTIVE State (i.e. PSTN Active Call or Maintenance Call), changing its Registration status from REGISTERED to UNREGISTERED, will not disconnect the existing call, but will prevent the establishment of a new call after the current call is disconnected.

An ISDN-established air link is constantly in ACTIVE State, thus, in order to block this SU, it must either be disconnected (see SU-CO connection), or blocked in the C.O. Network Management System.

Registration by SU#

To register by SU#:

1. Click the Registration tab to display:

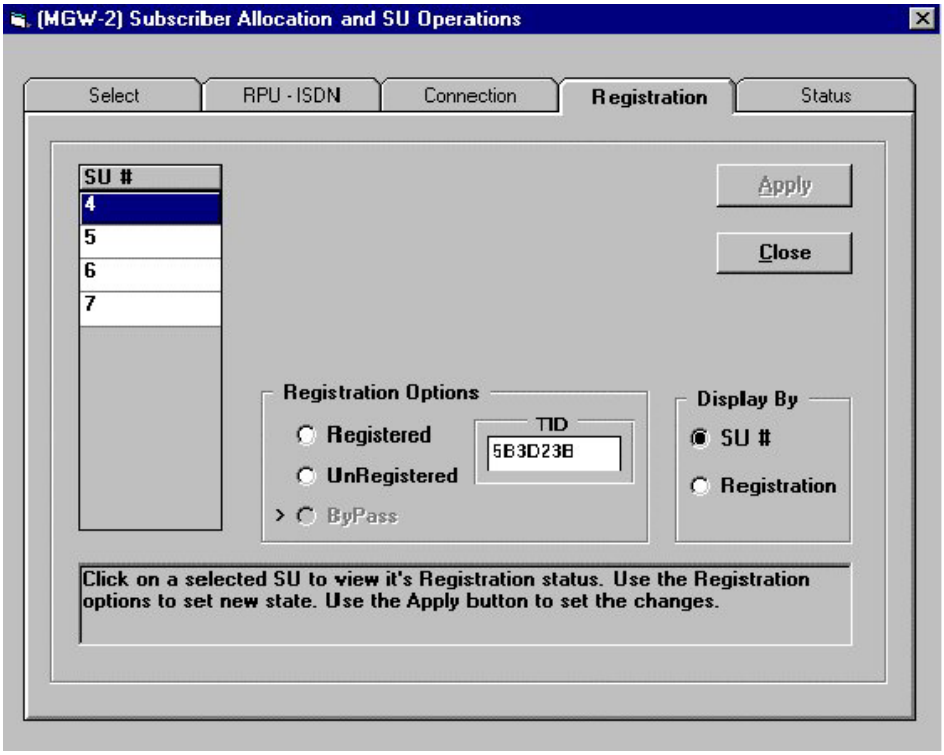


Figure 4-23: Subscriber Allocation and SU Operations (Registration I)

2. Check the DISPLAY BY SU# radio button. All previously selected Subscriber Units are displayed in the left SU# box.
3. Highlight a given SU#.
4. Check one of the available REGISTRATION OPTIONS
   Prior to SU installation, check the BYPASS option, to enable verification of the correctness of the installation and to retrieve the SU's TID.
5. After installation, check the REGISTERED option. A TID box is opened in this field. Fill in the TID of the selected SU.
6. Click the enabled Apply button to confirm and clikc the Close button.

NOTE

1. SU registration should be carried out according the commissioning policy of the operator. It is recommended to register the subscriber as by-pass so that communications to the subscriber can be checked as soon as the FAU has been installed.

2. The operator should record the TID number of the installed FAU opposite to its number in the list created (see *Create*)

3. If less than 29 FAUs were registered, the Touch-FAU feature causes a minor alarm, as FAUs are not yet installed and the system is not responsive. When the FAUs are installed, the alarm switches off.

4. If more than 30 FAUs were registered prior to installation, the Touch-FAU feature causes a major alarm.

Registration by Registration

To register by Registration:

1. Click the Registration tab to display:

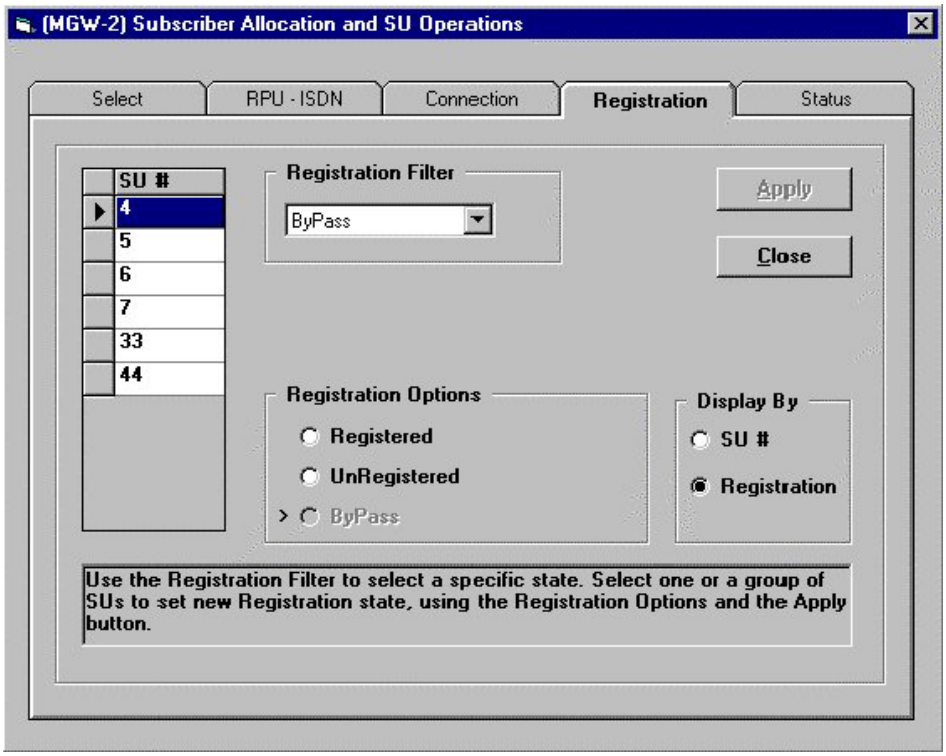


Figure 4-24: Subscriber Allocation and SU Operations (Registration II)

2. Check the DISPLAY BY REGISTRATION radio button.
3. Select REGISTERED, UNREGISTERED or BYPASS from the REGISTRATION FILTER drop down list.
4. The respective Registration OPTION is available according to the filter
5. Highlight a given SU#.
6. Check one of the required REGISTRATION OPTION radio buttons.

   Prior to SU installation, check the BYPASS option, to enable verification of the correctness of the installation and to retrieve the SU's TID
7. After installation, check the REGISTERED option. A TID box is opened in this field. Fill in the TID of the selected SU.
8. Click the enabled APPLY button to confirm and then, click the Close button.

Status

To check the status of an SU, click the **SELECT** tab in the **SUBSCRIBER ALLOCATION** dialog box to display "Status" mode:

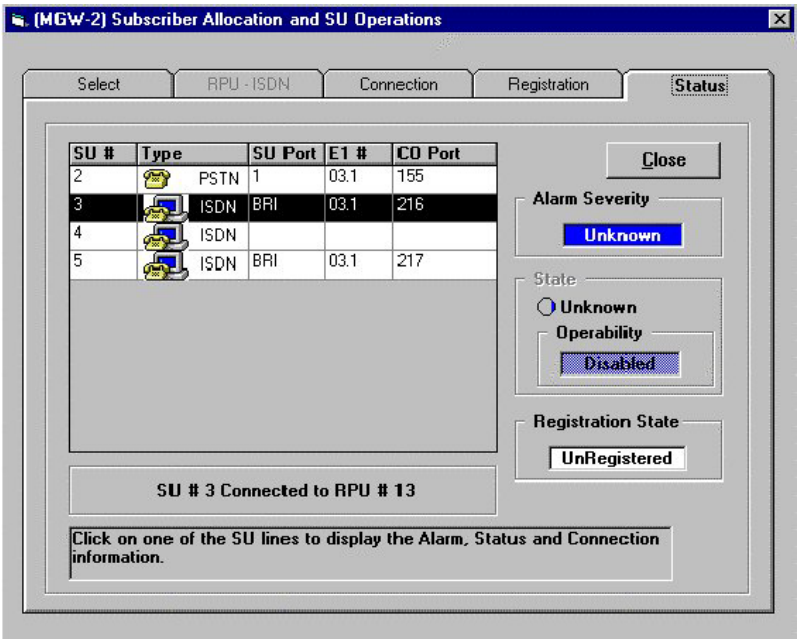


Figure 4-25: Subscriber Allocation and SU Operations (Status)

In the Creation Filter box, select the Created or All SU, and in the Type Filter select the All Types or PSTN or ISDN

As the SU is created but not installed, the system cannot communicate with it and the Alarm Severity is blue (Unknown). Later it becomes red (Major).

SU Deletion

To delete a Subscriber Unit, it is imperative to carry out the steps of the SUB/SU DECLARATION in reverse order. This maintains a clean system database and facilitates future subscriber creation.

To delete a Subscriber Unit:

1. SELECT the SU to be deleted on the SELECT tab, the CREATED SU in the CREATION FILTER and the appropriate type in the TYPE FILTER.
2. Unregister it.
3. Disconnect it.
4. Delete.

SU Parameter Provisioning

This phase of the process enables the operator to provision SU features, such as metering, ringing, voice encoding (64 Kbps channel) and Calling Line Identification. Radio parameters such as frequency hopping sequence, time diversity etc., can also be defined.

To provision SU features:

1. Highlight the SU (single or group) icon on the Network main screen.
2. Click the **Provisioning>Sub/SU PARAMETERS** main menu item to display the SU PARAMETERS dialog window – see Figure 4-26 below.
3. Available options:
   - Select
   - Service Parameters
   - Radio Parameters

Service parameters can also be provisioned using the HFIT 2000.

Selection

The SU Parameters dialog window display:

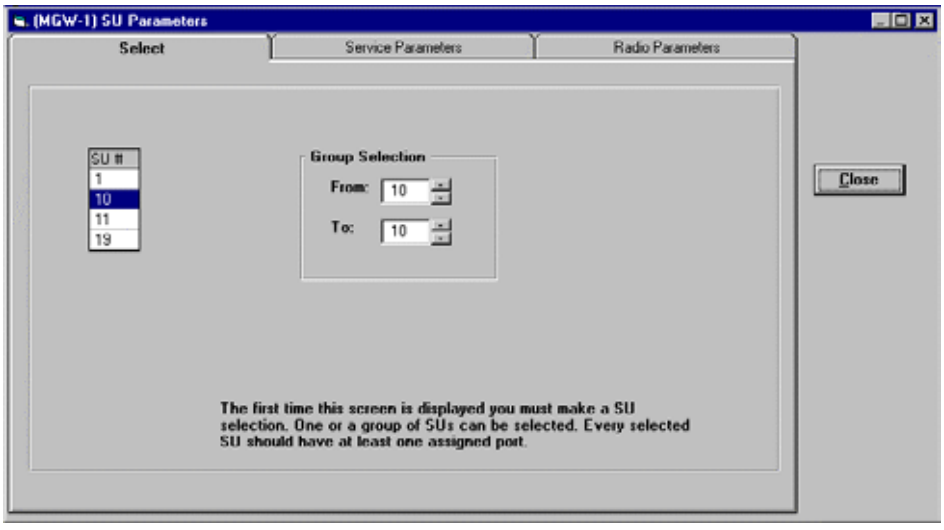


Figure 4-26: SU Parameters Dialog Window (Select)

Click the SELECT tab and select the required SU# is selected from the SU# drop down list. A group is selected on the GROUP SELECTION field.

Service Parameters

To modify the Service Parameters:

1. Click the Service Parameters tab to display the corresponding screen:

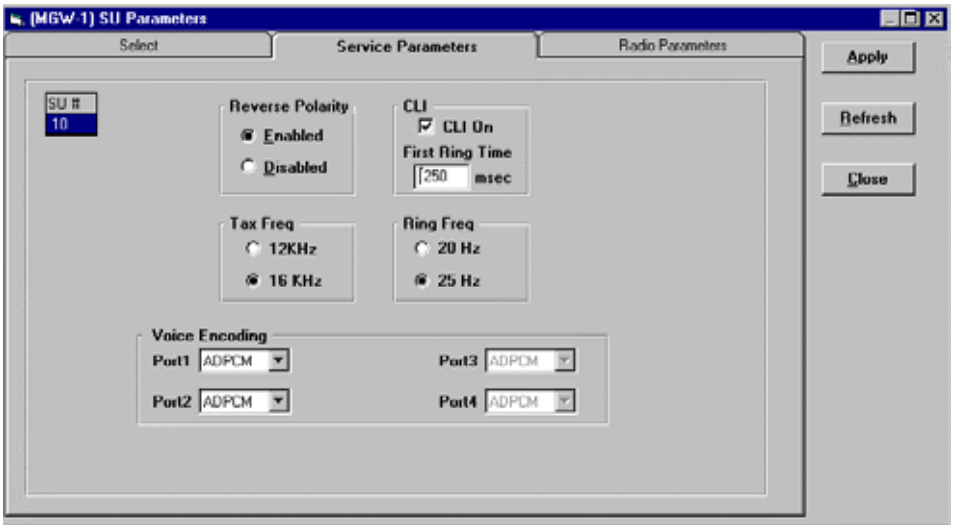


Figure 4-27: SU Parameters Dialog Window (Service Parameters)

2. Check the parameters:
   - REVERSE POLARITY - On (Enabled) or Off (Disabled)
   - TAX PULSE frequency - 12 KHz or 16 KHz
   - CLI - On and the required delay for FIRST RING TIME
   - Ringing Frequency - 20 Hz or 25 Hz
   - VOICE ENCODING - select PCM (64 Kbps), ADPCM (32 Kbps), or APCM (64/32 Kbps)
3. To modify one or all the above parameters, re-write the parameter value and clikc the REFRESH button.
4. Click the Apply button to implement the features.

Radio Parameters

To modify the Radio Parameters:

1. Click the RADIO PARAMETERS tab to display the corresponding screen:

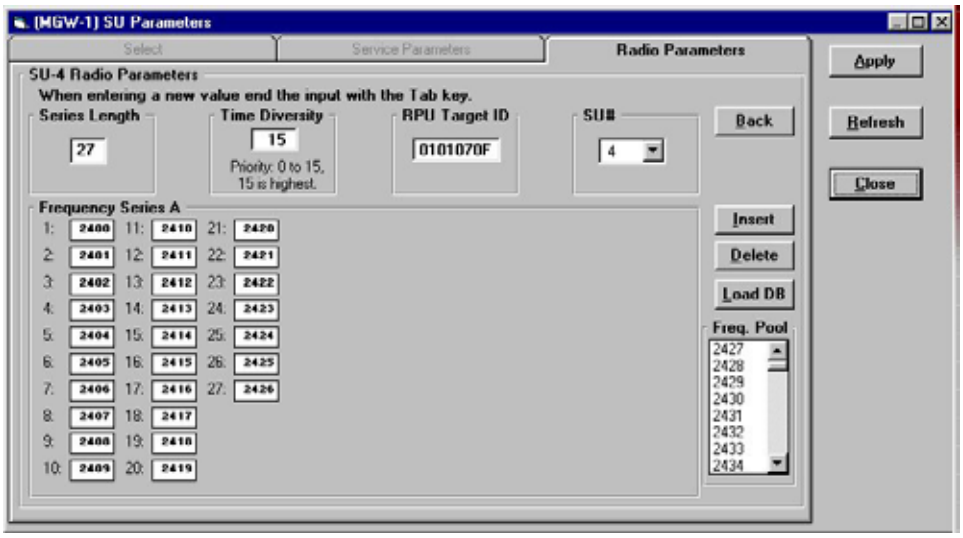


Figure 4-28: SU Parameters Dialog Window (Radio Parameters)

2. Check the PARAMETERS:
   - FREQUENCY TABLE - select table A or B (future feature)
   - TIME Diversity - ENABLE the feature with appropriate priority

NOTE

When Time Diversity is enabled, the PCM feature cannot be assigned to the SU

   - RPU Target ID - the number of the RPU to be tracked by the SU. Wild cards can be inserted to allow flexibility of operation.
   - SU# - the number of the selected SU.
   - FREQUENCY Series - details of the existing Frequency Hopping sequence

3. To MODIFY one or all the above parameters, re-write the parameter value and click the REFRESH button.
4. To MODIFY the frequency hopping table, click the MODIFY button and proceed to Section *Modify* below.

5. Click the APPLY button to activate the parameters, and then the CLOSE button.

NOTE

A Modify button will appear on the screen to the right of the SU# field:

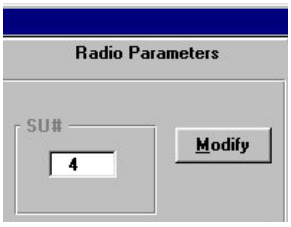


Figure 4-29: Modify Button

Modify

To modify the frequency hopping table:

1. Click the MODIFY button.
2. Click the INSERT or DELETE buttons to change the frequencies or the LOAD DB (database) to change it altogether.
3. Click the APPLY and then the CLOSE buttons to activate the changes, or click the BACK button to return to the the RADIO PARAMETERS menu.

GSS Operation (Option)

The GSS sub-assembly is installed when the MGW network comprises several RPCU sites. In order to utilize the frequency band to the utmost, a GSS is installed at every RPCU site. Consequently, the RPCUs across the system use the same satellite-derived clock, minimizing mutual interference.

Refer to CMAP 8010 manual for more details of GSS operations.

5

Chapter 5 - Main Map

In This Chapter

- Main Map, page 5-2

Menu – Main Map

The Main Map is the first screen to appear when you activate the CraftMap program. This screen displays the overall scheme around the RPCU:

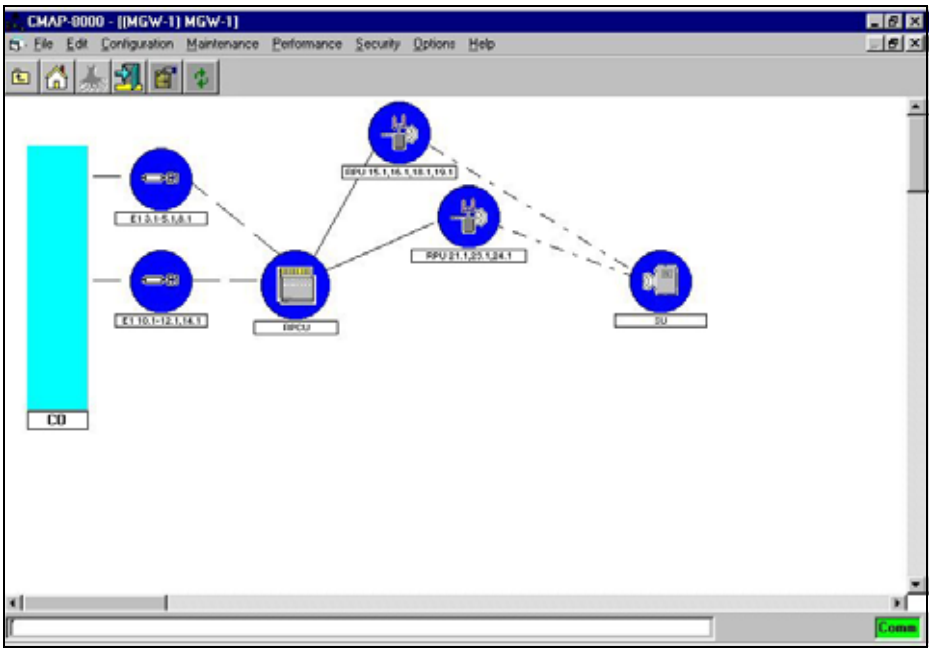


Figure 5-1: Main Map

The menu items relating to the Main Map display are described in the following:

File

Click the "File" item in the Menu bar to open the drop down menu, comprising the "Exit" item:

Figure 5-2: File Item in the Menu Bar

Click the “Exit” item to display the following pop-up message:

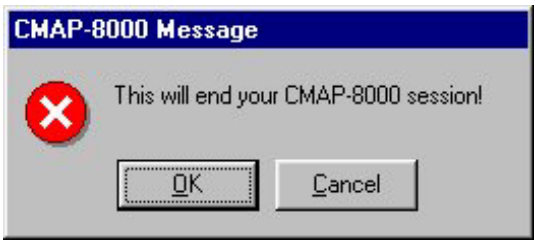


Figure 5-3: CMAP-8000 Pop-up Window

Press “OK” to quit CraftMap.

Press “Cancel” to return to CraftMap.

NOTE

You can also exit CraftMap by clicking the Exit button in the button bar immediately below the main menu.

Edit

Click the Edit to open the item in the main menu bar to open the drop down menu:

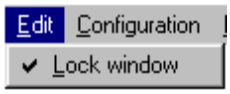


Figure 5-4: Edit Item in the Menu Bar

The single “Lock window” item is highlighted. The “√“ in front of the item (the main map default) indicates that the active window is locked.

Click on the Lock window item to unlock an active window. The “√“ will not appear in front of the item.

NOTE

All sub-maps are unlocked in their default mode.

Configuration → Provisioning

Click the "Configuration" item in the Main Menu to open the drop-down menu.

Figure 5-5: Configuration Item in the Menu Bar

Click the Provisioning item to display the available sub-menu options. If no item in the network is in focus, all possible Provisioning options are displayed:

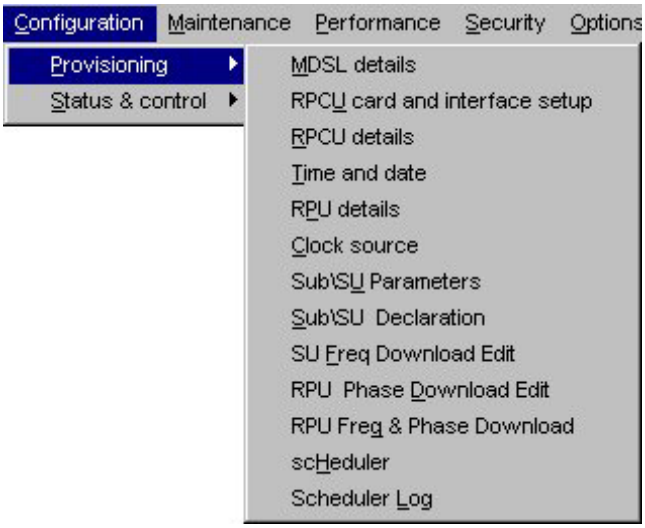


Figure 5-6: Provisioning Item

The various options are described below.

MDSL Details

Click the MDSL details option to display the MDSL details pop-up window:

NOTE

If no item in the network is in focus, the MDSL details pop-up window will display as shown below (only the Cancel button is enabled):

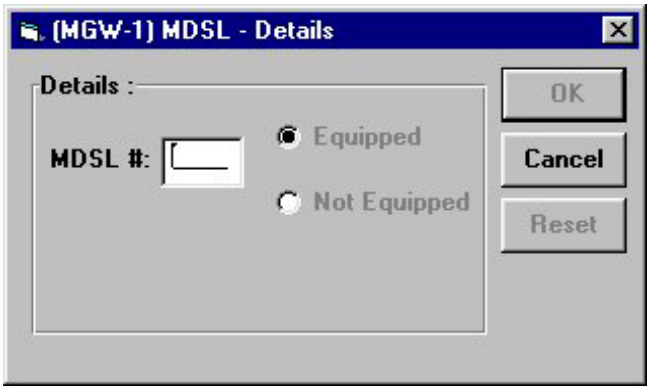


Figure 5-7: MDSL Details Pop-up Window (1)

Fill in the MDSL # and press the keyboard Tab key to enable the Equipped and Not Equipped check boxes, as well as the OK and Reset buttons:

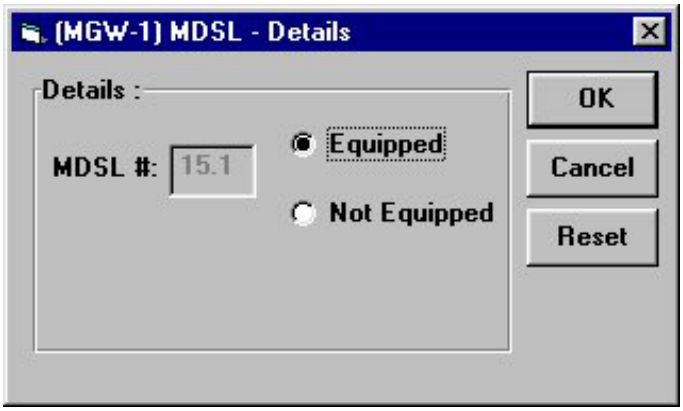


Figure 5-8: MDSL Details Pop-up Window (2)

NOTE

The MDSL # is displayed in gray.

Press OK to obtain confirmation of the MDSL # (see below).

As the user does not necessarily know the MDSL details, this procedure is by definition a trial and error process.

The user has two options: “Equipped" and "Not Equipped."

The default for the current MDSL status is “Equipped."

The consequences of the MDSL indicating “Not Equipped” are:

- Non-provision of services by the MDSL and RPU/RPC
- RPU/RPC feeder voltage power off across the MDSL
- No further line alarm signals

The default for a new MDSL is “Not Equipped.”

Alternative actions:

1. Press “OK” to confirm choice of option and display the CraftMap confirmation message prompt:

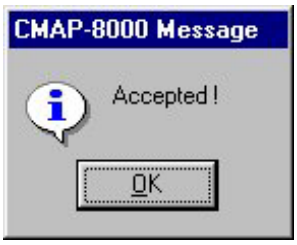


Figure 5-9: CMAP 8000 (Accepted) Message

2. Press “Cancel” to exit MDSL Details without making any changes.
3. Press “Reset” to retrieve the last equipment configuration from the RPCU.

RPCU Card And Interface Setup

After installing the system, the system administrator is required to define the RPCU card and interface setup. This is done by highlighting the RPCU object in the Main Map and then clicking the Configuration > Provisioning > RPCU card and interface setup menu item (see *General* Section), to display the RPCU slot configuration dialog window:

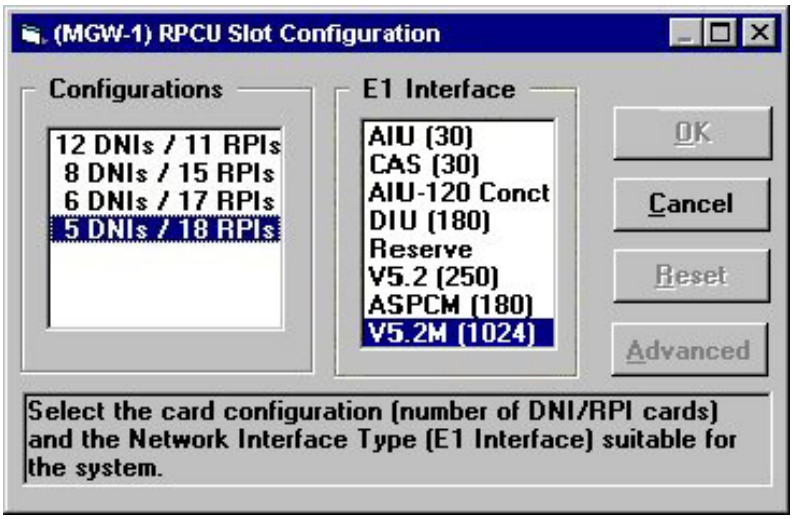


Figure 5-10: RPCU Slot Configuration Dialog Window (1)

Initially, only the Cancel button is enabled.

NOTE

The Advanced button is only enabled for V5.2and V5.2M E1 interfaces.

Highlight the required card configuration from the "Configurations" list and the network interface type from the "E1 Interface" list. Consequently, the OK, Cancel and Reset buttons are enabled:

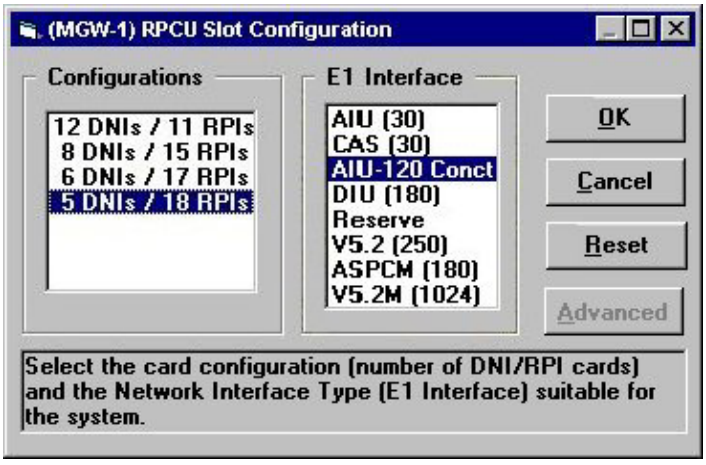


Figure 5-11: RPCU Slot Configuration Dialog Window (2)

Press the OK button to display:

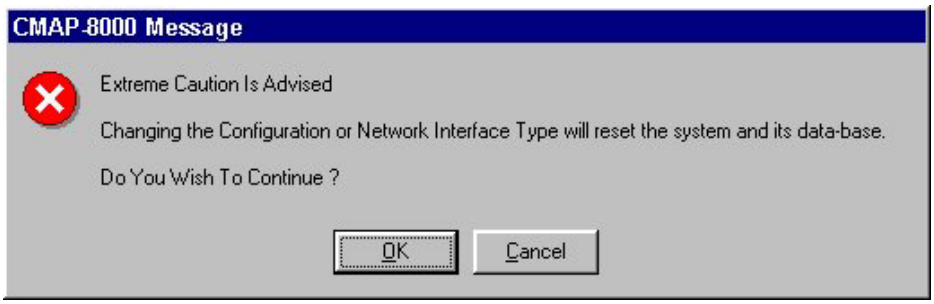

CMAP-8000 Message
Extreme Caution Is Advised
Changing the Configuration or Network Interface Type will reset the system and its data-base.
Do You Wish To Continue ?
OK
Cancel

Figure 5-12: CMAP 8000 (Cautionary) Message

Press the OK button to activate the configuration procedure. The window will display as follows:

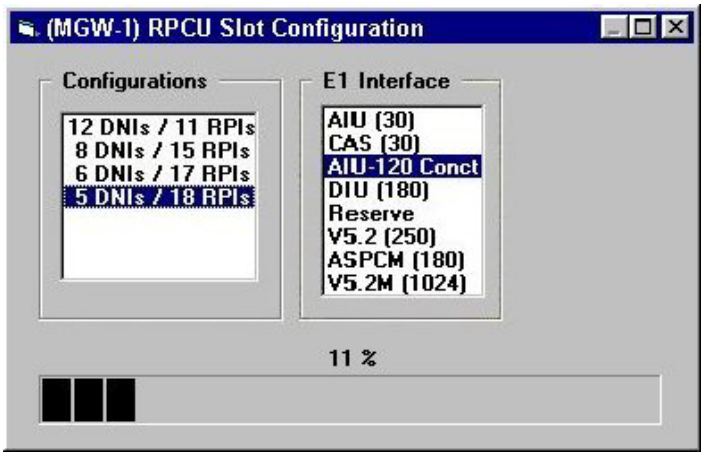


Figure 5-13: RPCU Slot Configuration Dialog Window (3)

After the configuration procedure is complete (after some 15 seconds), the system will display the following message:

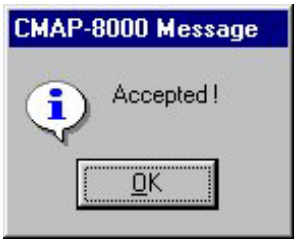


Figure 5-14: CMAP 8000 (Accepted) Message

Press the OK button to confirm acceptance and return to the Main Map.

The DNI/RPI card configuration should be defined before initiating RPCU service. Changing the configuration setting during RPCU operation will cause the database to reset.

The E1 interface determines the type of digital protocol and number of possible subscribers for all E1's associated with the RPCU.

V5.2 Single E1 Interface

Select the V5.2 (250) E1 Interface to display the appropriate RPCU slot configuration dialog window:

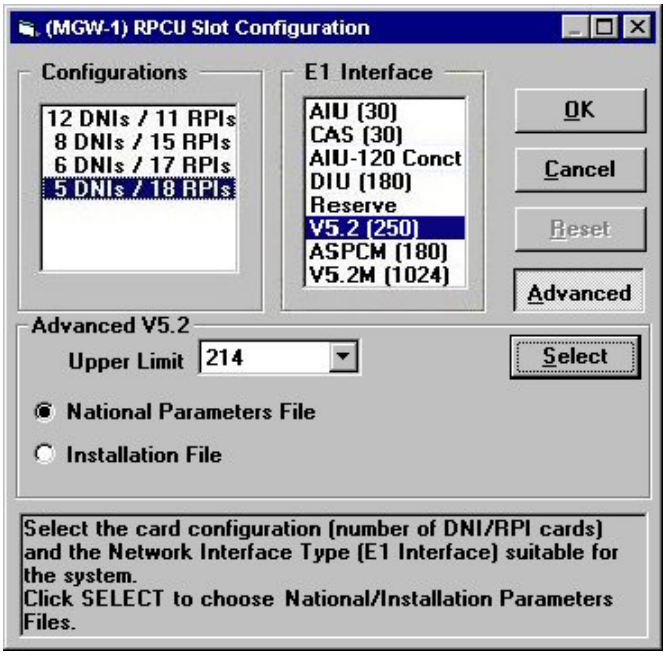


Figure 5-15: RPCU Slot Configuration Dialog Window (4)

The expanded window now includes the “Advanced V5.2” pane.

It is possible to set the Upper limit of the PSTN subscribers from 214, which is the minimum number of such subscribers, up to 250 PSTN subscribers. The number of ISDN subscribers is then 36 to zero, respectively.

Select the “Upper Limit” from the drop-down list box (214, see Figure 5-15).

The PSTN type can be connected to port #s 1 – (Upper Limit – 1).

An ISDN-type SU can be connected from the Upper Limit upwards.

NOTE

ISDN is only available with the V5.2 Single/Multi E1 Interface.

Select the National Parameters File (*.npf) and Installation File (*.ipf) by clicking the “Select” button in the “Advanced V5.2” pane to display the “Open File” dialog window and checking the respective radio button (National Parameter Files in Figure 5-15).

Selecting the appropriate file and click the OK button to display the corresponding parameters:

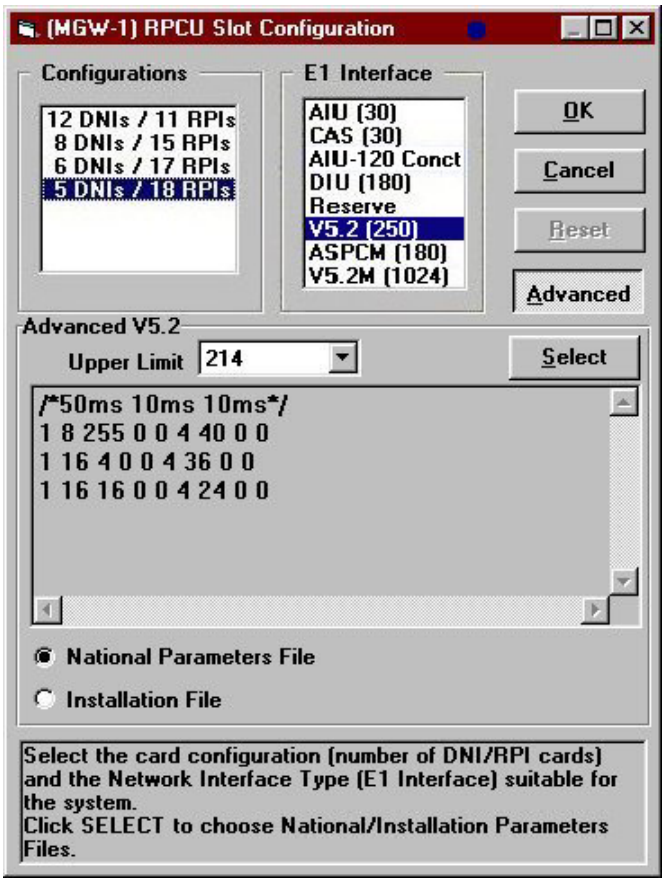


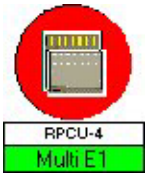
Figure 5-16: RPCU Slot Configuration Dialog Window (5)

V5.2M E1 Interface

Select the V5.2M (1024) E1 Interface to display the appropriate RPCU slot configuration dialog window (refer to *V5.2 Provisioning* Section).

Select the E1 PSTN Upper Limit as required (988 to 1024).

When the RPCU is defined to operate with V5.2M (1024) as the E1 interface, the configuration is indicated in upper right corner of the shelf screen and the RPCU icon in the main map is labeled accordingly:



Double-click the “Multi-E1” label of the RPCU icon in the main map screen to display the multi E1 alarm status pop-up window:

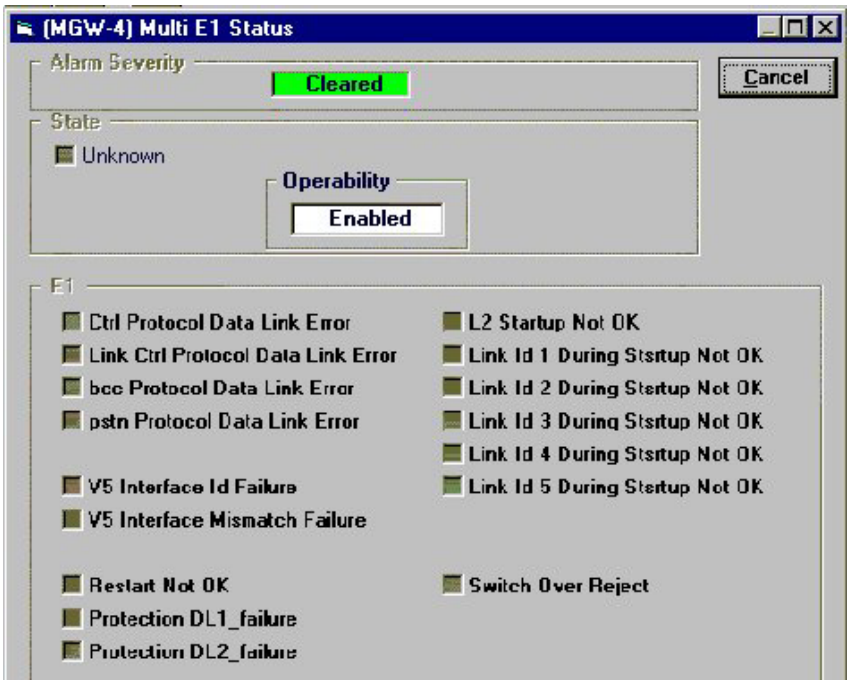


Figure 5-17: Multi E1 Status Pop-up Window

RPCU Details

Click the "RPCU Details" option to display the RPCU - Details pop-up window:

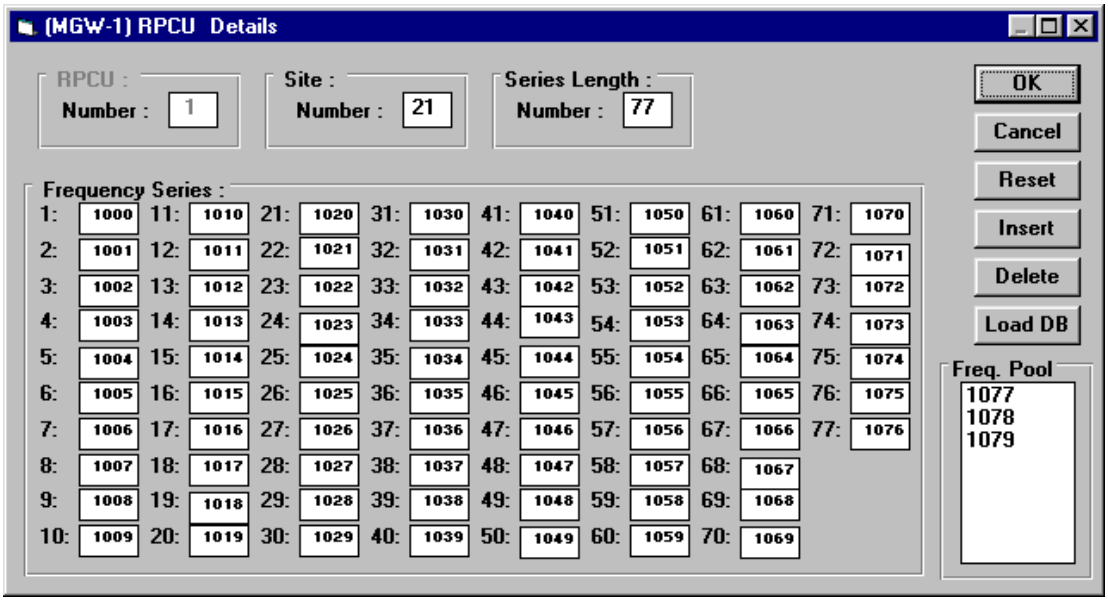


Figure 5-18: RPCU - DETAILS Pop-up Window

The **RPCU Number** box indicates the RPCU's unique ID number. The box displays the appropriate number in gray scale, indicating that this number cannot be modified. This number is fixed by the RPCU motherboard dip switch settings (up to 31 address settings), used for RPCU addressing.

The **Site Number** is a unique number assigned to each base station. If the network is in communication with CraftMap, the Site Number box will display the RPCU location ID. This number can vary between 1 - 255 and is common to all RPCU's mounted at the same site.

Entering an incorrect Site Number will display a Message window:

Figure 5-19: CraftMap Message

The **Series Length** Number indicates the range (up to 80 – not necessarily contiguous numbers) of the required Frequency Series. The operator can either accept or revise the current (previous) setting as required. If the program is being initialized, the operator will enter the required number accordingly.

NOTE

When the Series Length Number is entered, the Frequency Series frame generates empty fields (boxes) for insertion of appropriate frequency values according to the pre-determined frequency hopping order.

NOTE

If an RPU/RPC phase number is greater than the RPCU Series Length, the CMAP 8000 pop-up message window will be displayed:

Figure 5-20: CMAP 8000 Message Pop-up Window

NOTE

USA users: Frequency information can only be retrieved from the CraftMap database. The **Load DB** function should be activated by pressing the appropriate button to load the data base containing relevant site RPU/RPC and frequency series information. A specific customer search is made by Site and RPCU numbers to obtain the relevant information.

The **Frequency Series** is assigned to all RPU/RPC's, enabling frequency hopping within the frequency range. The hopping order is determined according to the frequency series and the initial frequency is defined exclusively for each RPU/RPC.

Proceed as follows (ROW users):

Select a frequency from the "**Freq Pool**" (see Figure 5-18) and drag the figure to a box in the Frequency series. Continue until all the boxes are filled and the Freq Pool is empty (in the case of 80 boxes). The Frequency Pool lists all available frequencies (dependant upon the current frequency band), ranging from a starting frequency that can be varied under the "Options>Frequeny band" main menu item.

A given number of text boxes (80 maximum) can be assigned the same number of frequencies. A given frequency can only be entered one time. An illegal entry will prompt a STOP response by the CraftMap. To proceed, correct the entry or CraftMap will return you to the box in error.

If the Series Length Number is less than 80, the corresponding number of text boxes will be displayed.

To temporarily stop all RPU/RPC activity:

1. Press OK to display the CraftMap message:

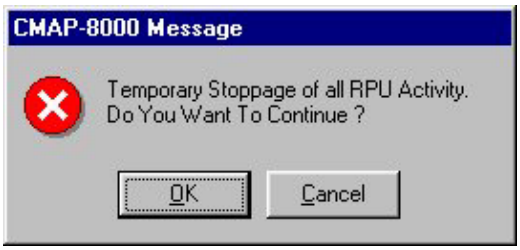


Figure 5-21: CraftMap Confirmation Message

Press "OK" to confirm your action, which will temporarily cause a stoppage of all RPU/RPC activity.

2. Press "Cancel" to terminate RPCU Details and exit the window without any change.

3. Press "Reset" to retrieve the last equipment configuration from the RPCU.

A Frequency Series can be edited using the "Insert" and "Delete" buttons.

To insert a frequency in a given Frequency Series, position the cursor in the text box preceding the required insertion and press the “Insert” button, to displace the remainder of the series by n+1 boxes, leaving an empty text box for the new frequency.

To delete a frequency from a given Frequency Series, position the cursor in the frequency text box and press the “Delete” button to delete the frequency and reduce the Frequency series accordingly.

Time and date

Click the Time and Date menu item to display the RPCU Time & Date pop-up window:

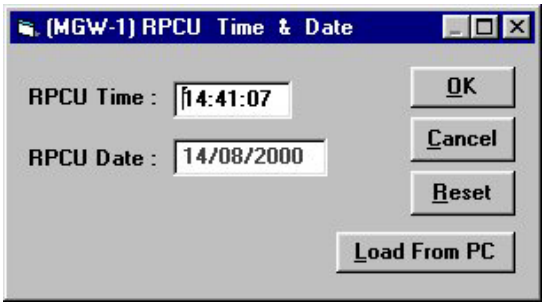


Figure 5-22: RPCU Time & Date Pop-up Window

The above window enables you to fix the RPCU internal time and date, according to hh:mm:ss and dd/mm/yyyy format respectively.

The time and date are administered through the RPCU MPM card.

NOTE

Even if the MPM card is without power, the clock continues to run.

The current RPCU Date and Time are displayed when the window is activated.

If necessary, the current readings can be modified by the user

Press the Reset button to retrieve the current Date and Time.

Press the Load from PC button to retrieve the Date and Time from the PC clock.

NOTE

The Date and Time can also be entered manually.

Press the OK button to fix the Date and Time and return to the previous screen.

RPU/RPC details

Click the Configuration>Provisioning>RPU/RPC details menu item to open the RPU/RPC Details pop-up window.

If the main map is currently active, without an RPU/RPC "in focus," the following pop-up window is displayed:

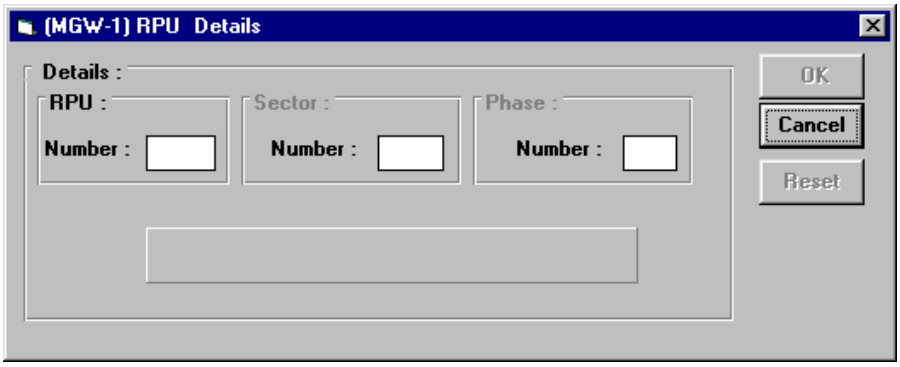


Figure 5-23: RPU/RPC Details Pop-up Window (1)

NOTE

Only the RPU/RPC Number field and Cancel button are enabled.

Enter the required RPU/RPC number and press the Tab key to display:

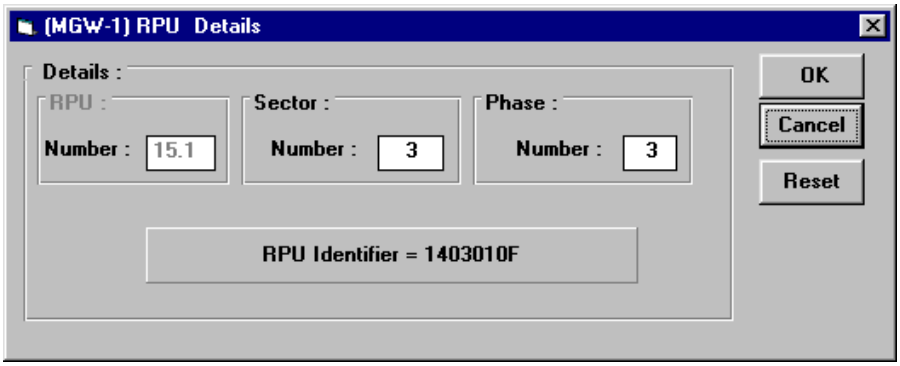


Figure 5-24: RPU/RPC Details Pop-up Window (2)

The RPU/RPC's corresponding Sector and Phase Numbers are displayed and the RPU/RPC Identifier appears below.

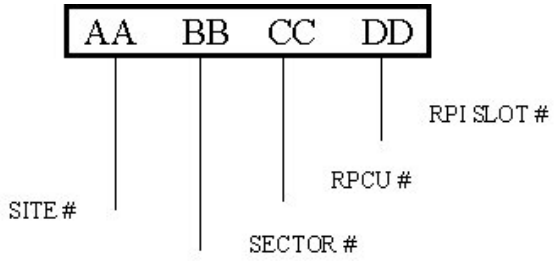
NOTE

The RPU/RPC Number field is disabled.

NOTE

For USA users: Phase Number display is for information only.

Table 5-1: Field/Box Definitions

Field/Box	Definition
RPU/RPC Number	8 to 26 per RPCU range - 8.1 - 26.1, not including 25.1
Sector Number	1 to 32 range (per RPCU)
Phase Number	The initial frequency index of a Frequency Series for a specific RPU/RPC (in the range: 1 to frequency series length)
RPU/RPC Identifier	The RPU/RPC IDENTIFIER number is created automatically from the details of the RPU. The user should record the number, as it will be keyed into the SU as its Target ID number. The RPU/RPC Identifier is used to establish the association of the FAU to RPU/RPCs. In order to activate the co-location feature, wild cards (asterisks) can be inserted in the RPI Slot # field - see figure below. Wild cards can be inserted in any field of the Target ID number of the FAU, to increase flexibility in the operation of the system.  AA, BB, CC and DD are expressed in hex format.

If no information changes, press OK to display the following message:

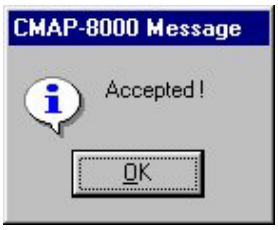


Figure 5-25: CMAP-8000 Message Pop-up Window

Press the OK button to return to the main screen.

If, on the other hand, changes are made, press OK to display the following message:

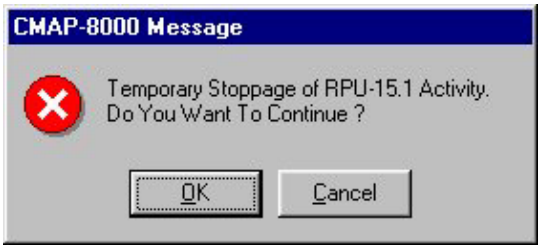


Figure 5-26: CMAP-8000 Message Pop-up Window

Press “OK” to continue and temporarily suspend RPU/RPC services in order to update frequency and phase information.

Press “Cancel” to terminate RPU/RPC Details (Figure 5-24) without any change.

Press “Reset” to retrieve the last equipment configuration from the RPCU (Figure 5-24).

Clock source

Click the Clock source item to display the RPCU - Clock Priority Table pop-up window:

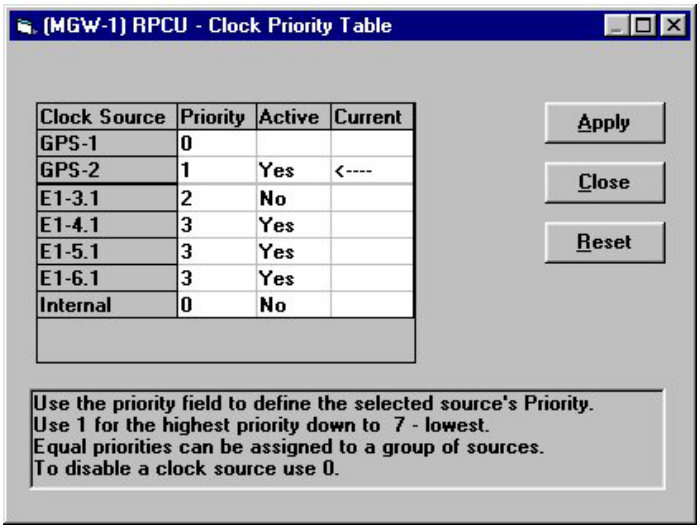


Figure 5-27: RPCU - Clock Priority Table Pop-up Window

The RPCU clock rate is obtained from one of seven possible clock sources. These are listed in the **Clock Source** column in the Clock Priority Table (Figure 5-27). The current clock source is indicated by "←" in the **Current** column of the Priority Table.

Priority Column data vary between 1 (highest priority) and 7 (lowest priority). Zero (0) in the Priority Column indicates that the Clock Source is disabled. Only this column is subject to change by the user. If no changes are made, the Apply button remains disabled. Once a change is made, the Apply button is enabled accordingly.

The **Active** Column indicates whether or not (Yes/No) the Clock Source can provide a service. With Priority zero (0), services cannot be provided and the Active cell is empty.

If two or more clock sources are assigned identical priority levels, the sources are considered as a group and the RPCU automatically selects the valid source from that group.

Every 10 seconds the Clock Priority Table is automatically updated with respect to the current clock source activity and the currently selected source.
Press the Reset button if you wish to update the table with respect to RPCU status.

The Window remains open until the Close button is pressed.

To change priority levels in the Priority Table:

1. Highlight a row in the Priority table to display the Priority box, Cancel (**x**), and Accept (✓) buttons immediately above the table:

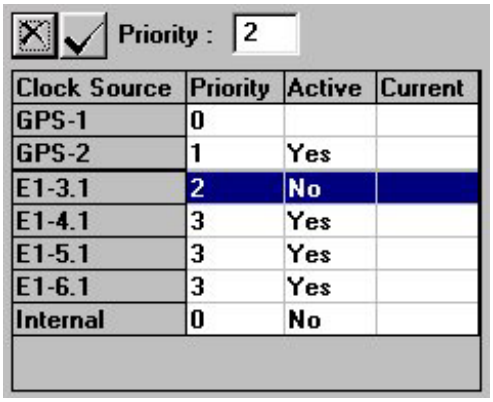


Figure 5-28: Priority Box

Press the Cancel button to cancel the operation.

2. Change the current priority level by inserting a new figure in the Priority box and press the Accept button to change the corresponding figure in the Priority table. The Apply button is now enabled.

3. Press the Apply button to display the following message:

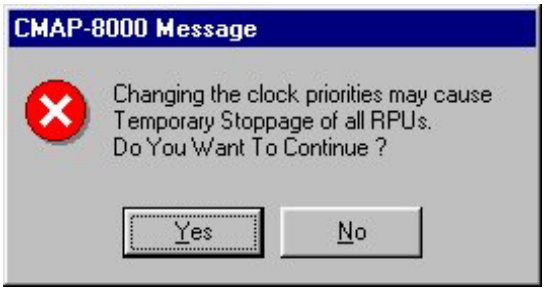


Figure 5-29: CMAP-8000 (Warning) Message

4. Click Yes to continue and display the CMAP-8000 "Accepted" message. The Apply button in the RPCU- Clock Priority table is once more disabled.

NOTE

The affected clock selection can be viewed following the accept message.

5. Press Close to return to the Main Screen.

Sub/SU Parameters

The Sub/SU Parameters menu item combines three modes: Select, Service Parameters and Radio Parameters in a single window.

The menu item is enabled when an SU object is highlighted.

Version 2.3 provides for activation of Asymmetric PCM (APCM). This feature can be set for each regular FAU. When an FAU port is set to Asymmetric, all outgoing calls are carried at 64 Kbps, occupying 2 time slots, while all incoming calls are carried at 32 Kbps ADPCM, occupying a single time slot.

Select Mode

Click the Configuration>Provisioning>Sub/SU Parameters menu item to display the corresponding dialog window in Select mode:

Figure 5-30: SU Parameters Window (Select Mode)

The first time the window is displayed, select one or more SU's, where each SU should have at least one assigned port.

Service Parameters

Selection of the Service Parameters option allows the user to assign Reverse Polarity, CLI (Calling Line Identification), Signaling Control (Reverse Polarity, Taxing Pulse Frequency and Ringer Frequency) and Voice Coding.

Click the Service Parameters tag to display the corresponding mode:

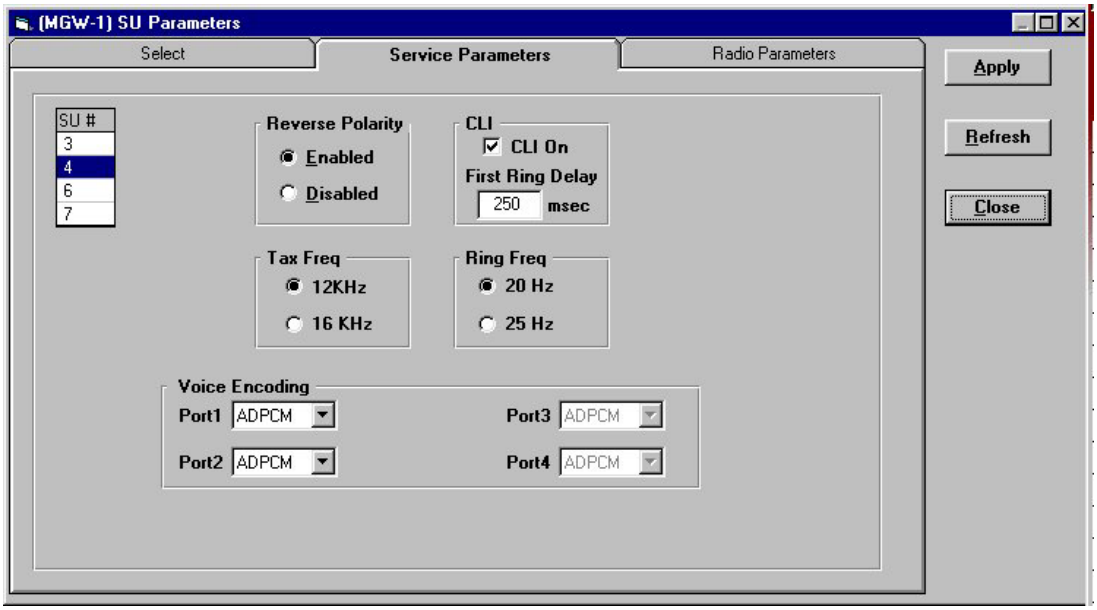


Figure 5-31: SU Parameters Window (Service Parameters Mode)

The SU's selected in the Select mode are listed in the SU# box.

Select an SU to display the SU's respective service parameters (see Figure 5-31). Check the settings and change any particular parameter setting as required.

The voice coding service parameter enables ADPCM/PCM/APCM to be assigned to the subscriber. In the case of FAU-1, each port can be assigned ADPCM, PCM, or APCM. In the case of FAU-2, each of the 2 ports can be assigned either ADPCM, PCM, or APCM. In the case of FAU-4, each of the 4 ports can be assigned ADPCM, but a PCM or APCM assigned port disables another port. If a PCM or APCM is assigned to a given port, only 3 ports are available and one port is disabled:

Table 5-2: Basic Parameters		
PCM/APCM Assigned Port#	**Disabled Port#**	**Available ADPCM Port#'s**
1	3	2,4
2	4	1,3
3	1	2,4
4	2	1,3

Click the Apply button to display the CMAP 8000 message:

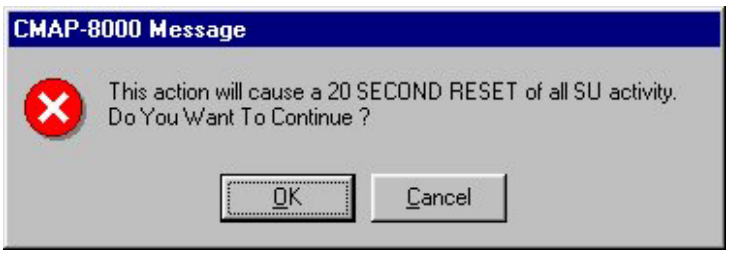


Figure 5-32: CMAP8000 Message

Click the OK button to accept the SU settings and continue.

NOTE

If no changes are made, CMAP 8000 responds with the message:

Figure 5-33: CMAP8000 Message

Repeat this procedure for each SU in the selected group.

Radio Parameters

Click the Radio Parameters tag to display the corresponding mode:

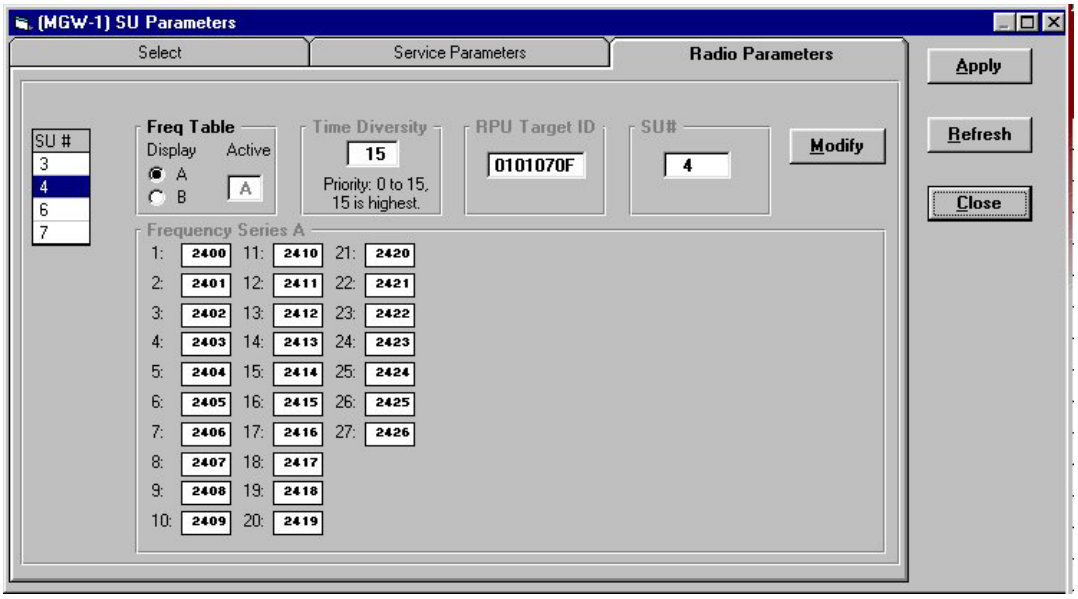


Figure 5-34: SU Parameters Window (Radio Parameters Mode) I

Click any one of the listed SU's to display the respective radio parameters for the given SU in terms of Freq Tables A or B. Figure 5-34 shows the response to SU #4 for Frequency Series A. Simply click the "B" radio button to display the response for Frequency Series B.

If you wish to revise the parameters in this mode, click the Modify button to display:

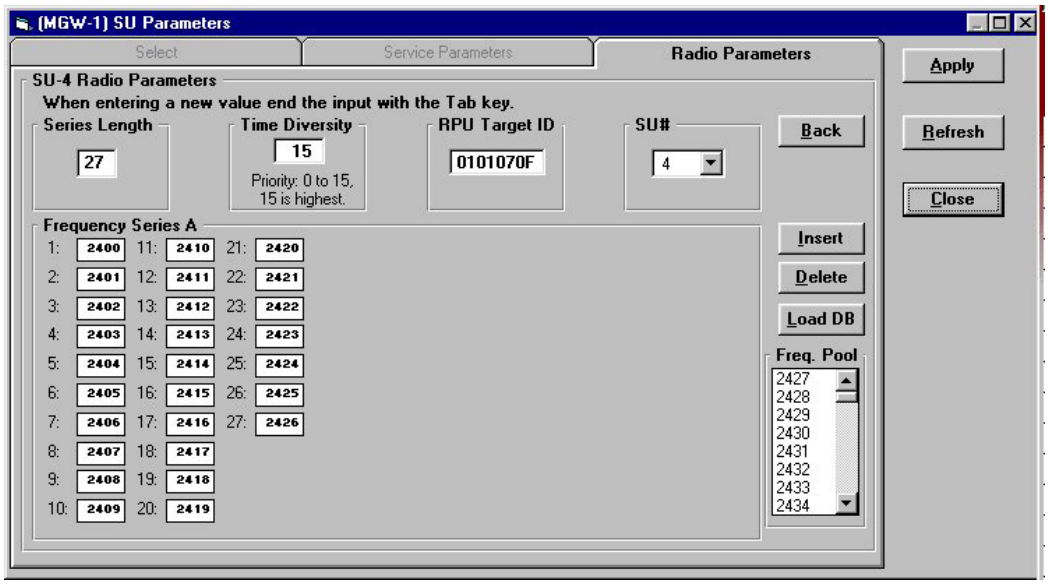


Figure 5-35: SU Parameters Window (Radio Parameters Mode) II

The above screen (Figure 5-35) enables the user to modify the various radio parameters corresponding to the selected SU (for more details relating to Time Diversity, see Appendix D).

Click the Insert and Delete buttons to increase or decrease items in the Frequency Series respectively. Boxes are added/deducted relative to the box indicated by the cursor. For example, increasing the series by clicking the Insert button three times with the cursor located in the first frequency box will display as:

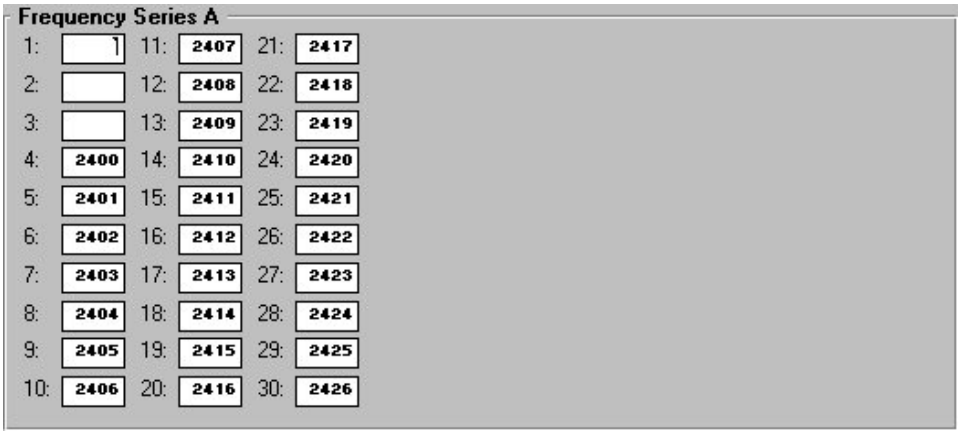


Figure 5-36: Frequency Series Dialog Box

In this case, select frequencies from the “Freq Pool” box and drag the selected frequencies to the “empty” boxes inserted into the frequency series.

NOTE

USA users: Frequency information can only be retrieved from the CraftMap database. Pressing the appropriate button to load the database containing relevant site RPU/RPC and frequency series information activates the Load DB function. A specific customer search is made by Site and RPCU numbers to obtain the relevant information

ROW users: A file containing frequency series information can be downloaded using the Load dB button, provided that the file was previously prepared by the planning team.

When revisions have been made to the user's satisfaction, click the Apply button to display the CMAP 8000 message:

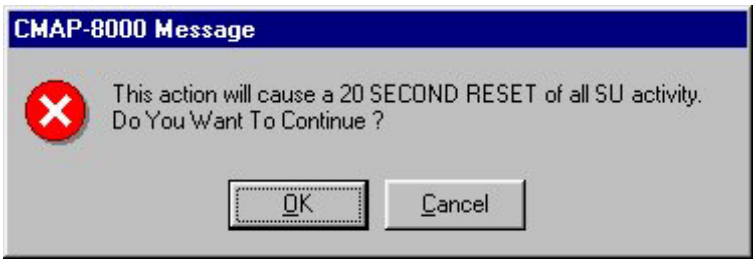


Figure 5-37: CMAP8000 Message

When these actions have been completed, click the Close button to return to the main map.

SU Freq Download Edit

The SU Freq Download Edit menu item is part of the Remote Frequency Modification (RFM) feature, facilitating download of new frequency data to all components of the MGW system - the RPCU, RPU and the FAU. This information is stored as a Modified Frequency Table together with the existing table and the swap between the two tables is executed upon a specific manual command.

The interactive window contains two screens: SU participants and Frequency Series accessed by clicking the respective tab.

The menu item is enabled when an SU object is highlighted.

SU Participants Mode

Click the SU Participants tab in Figure 5-46 to display the SU Frequency Download Edit Window in the SU Participants mode:

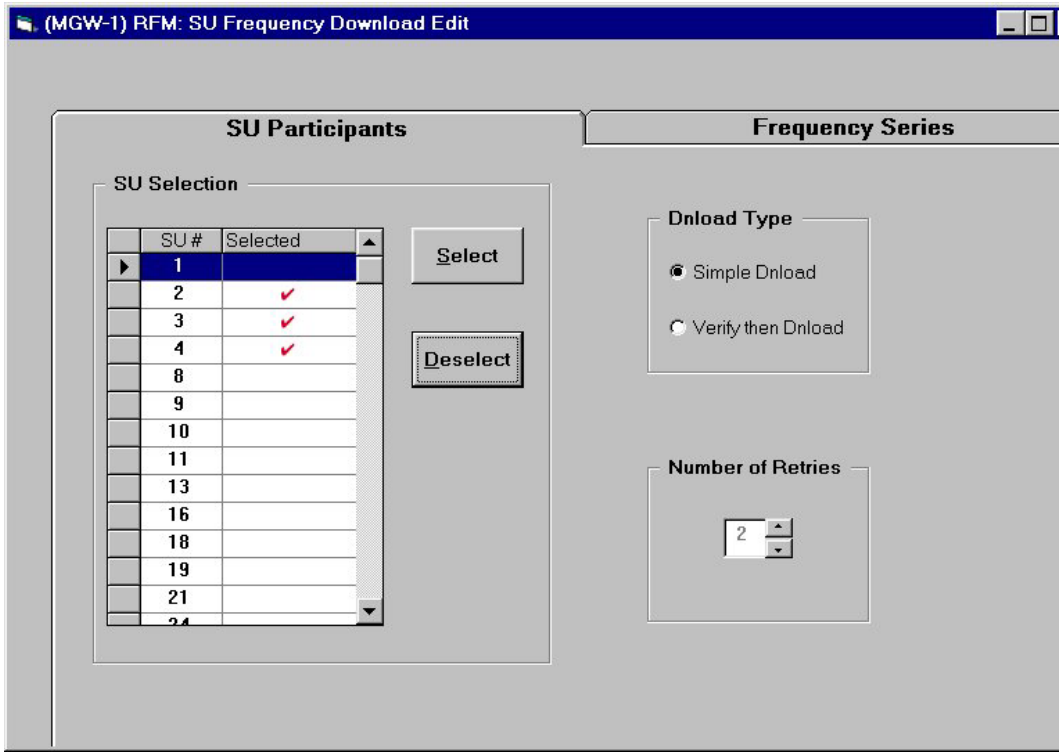


Figure 5-38: SU Frequency Download Edit (SU Participants)

Before selecting the required SU's (participants), the user must verify the active status of the selected SU's by referring to the SU map (see Figure 9-2).

The SU number series (see SU Selection pane above) must comprise consecutive numbers, for example, 2, 3, 4 (see Figure 5-38). A sequence numbering: 2, 3, 5, would be invalid.

In order to proceed with two SU sets, the user must execute two separate runs.

TIP

When execution of two or more runs is required, users are recommended to use the Scheduler function (see *ScHeduler*).

Frequency Series Mode

Click the Frequency Series tab in Figure 5-46 to display the SU Frequency Download Edit Window in the Frequency Series mode:

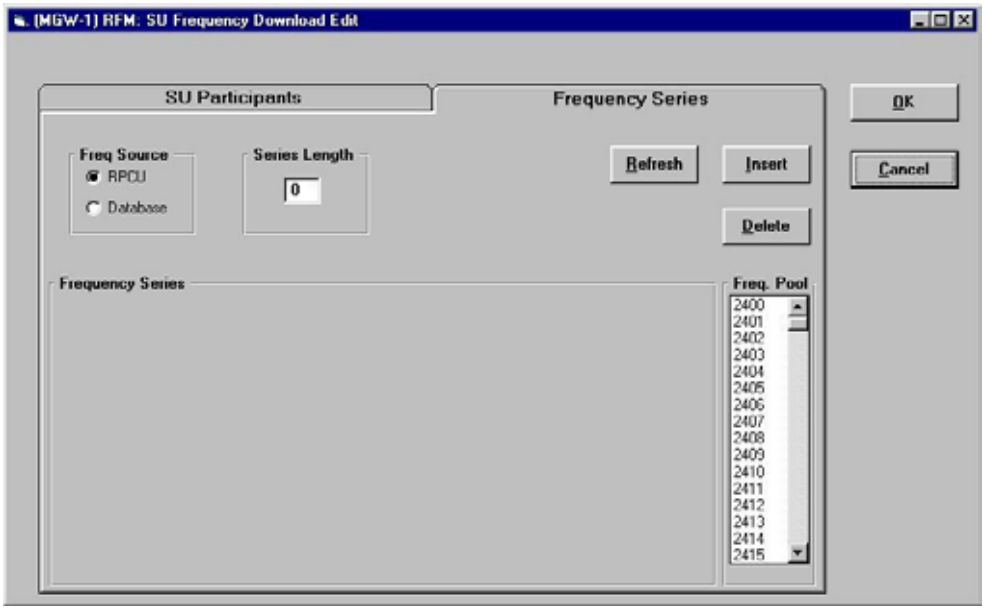


Figure 5-39: SU Frequency Download Edit (Frequency Series)

Select the frequency source by clicking the relevant radio button (RPCU/Database) in the Freq Source pane.

The user can vary the Frequency Series length by changing the current length as displayed in the Series Length pane. If the series length is increased, frequency series boxes are added. If the length of the frequency series is decreased, frequency series boxes are removed.

Click the Insert and Delete buttons to increase or decrease items respectively in the current Frequency Series. Boxes are added/deducted relative to the box indicated by the cursor.

Empty boxes in a revised frequency series are filled in by selecting frequencies from the “Freq Pool” box and dragging the selected frequencies to the “empty” boxes for insertion into the frequency series. The user can also type in new frequencies manually.

Click the Refresh button to recall the original frequency series status.

Click the OK button to save the SU participants and frequency series modifications in the CMAP database and return to the previous screen. If the modified frequency series is similar to the active frequency series, so that a false lock with the RPU/RPC, the following screen message is displayed:

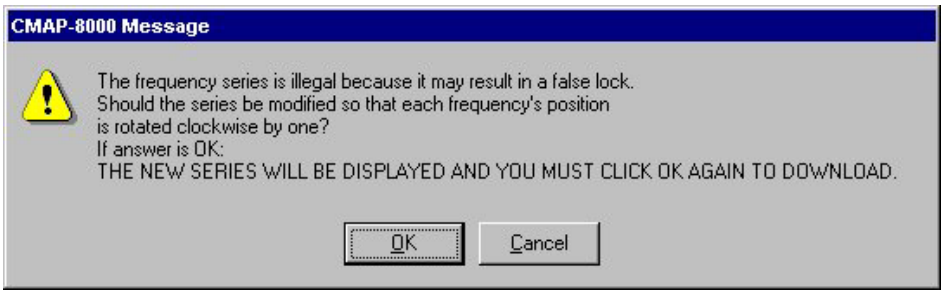

CMAP-8000 Message
The frequency series is illegal because it may result in a false lock.
Should the series be modified so that each frequency's position
is rotated clockwise by one?
If answer is OK:
THE NEW SERIES WILL BE DISPLAYED AND YOU MUST CLICK OK AGAIN TO DOWNLOAD.
OK
Cancel

Figure 5-40: CMAP 8000 (False Lock) Message Window

If the decision is to proceed as directed by the message spelt out in Figure 5-40, click the OK button to automatically modify the frequency series. If the automatically modified series is satisfactory, click the OK button (see Figure 5-39) to save the series in the database. Otherwise, click the Cancel button and proceed to modify the series as desired.

RPU/RPC Phase Download Edit

The RPU/RPC Phase Download Edit menu item, a Remote Frequency Modification (RFM) feature, combines two modes: Frequency Series and Phase Settings in a single window.

The menu item is enabled when the RPCU object is highlighted.

Click the Configuration>Provisioning>RPU/RPC Phase Download Edit menu item to display the RFM: RPU/RPC phase download edit dialog window:

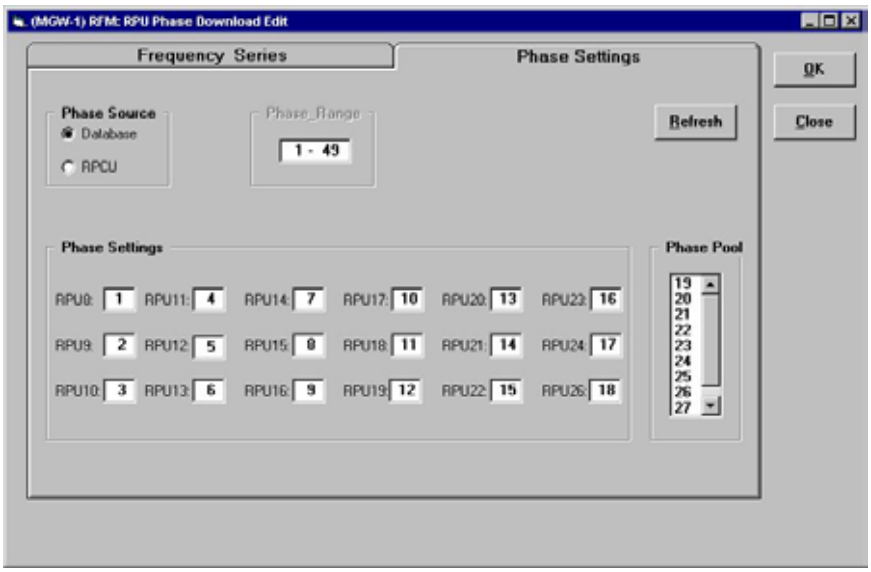

(MGW-1) RFM: RPU Phase Download Edit
Frequency Series
Phase Settings
OK
Close
Refresh
Phase Source
Database
RPCU
Phase Range
1 - 49
Phase Settings
Phase Pool
RPU0: 1 RPU11: 4 RPU14: 7 RPU17: 10 RPU20: 13 RPU23: 16
RPU9: 2 RPU12: 5 RPU15: 8 RPU18: 11 RPU21: 14 RPU24: 17
RPU10: 3 RPU13: 6 RPU16: 9 RPU19: 12 RPU22: 15 RPU26: 18
19 20 21 22 23 24 25 26 27

Figure 5-41: RPU/RPC Phase Download Edit Dialog Window (Phase Settings)

The Phase Settings defines the member of the frequency series at which the RPU/RPC begins transmission. The current settings are modified by "dragging" required settings from the Phase Pool to the appropriate Phase Settings-RPU/RPCnn field. Clicking the OK button saves the phase settings in the CMAP database.

Click the Frequency tab to display the display the Frequency Series frame:

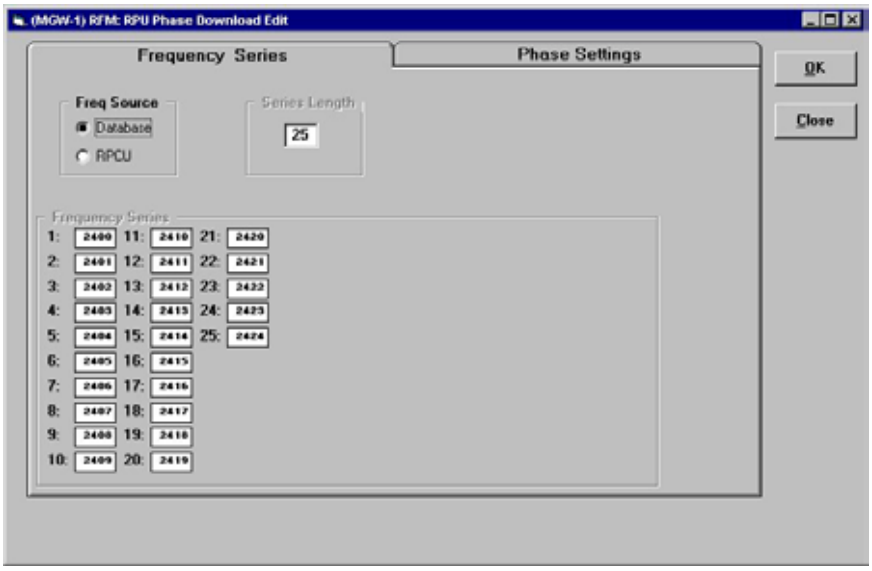


Figure 5-42: RPU/RPC Phase Download Edit Dialog Window (Frequency Series)

NOTE

Figure 5-42 is a read-only display

RPU/RPC Freq & Phase Download

Click the Configuration>Provsioning>RPU/RPC Freq & Phase Download menu item to display the following CMAP 8000 message:

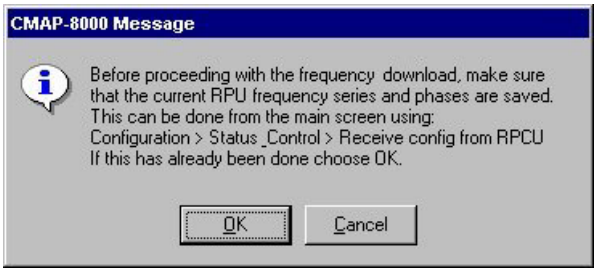

CMAP-8000 Message
Before proceeding with the frequency download, make sure that the current RPU frequency series and phases are saved.
This can be done from the main screen using:
Configuration > Status _Control > Receive config from RPCU
If this has already been done choose OK.
OK
Cancel

Figure 5-43: CMAP-8000 Message (RPU/RPC Freq & Phase Download)

Note the above message and proceed accordingly. This item is also accessed from the ScHeduler menu item (see below).

ScHeduler

The Configuration>Provisioning>scHeduler menu item is invoked to enable automatic, one shot revision of the MGW system frequency series. Each SU has two memory banks, each containing a frequency series. While one frequency series is active, the other remains inactive in standby mode. Thus, if an active frequency series is to be revised, the standby series can be modified without closing down the system.

The revised frequency series must be made available to all SU's. The Scheduler sets up the system for automatic downloading of the frequency series to all SU's, namely Remote Frequency Modification (see *SU Freq Download Edit*).

To proceed, highlight the RPCU or SU object in the main map and click the Configuration>Provisioning>scHeduler menu item to display the Schedular dialog window:

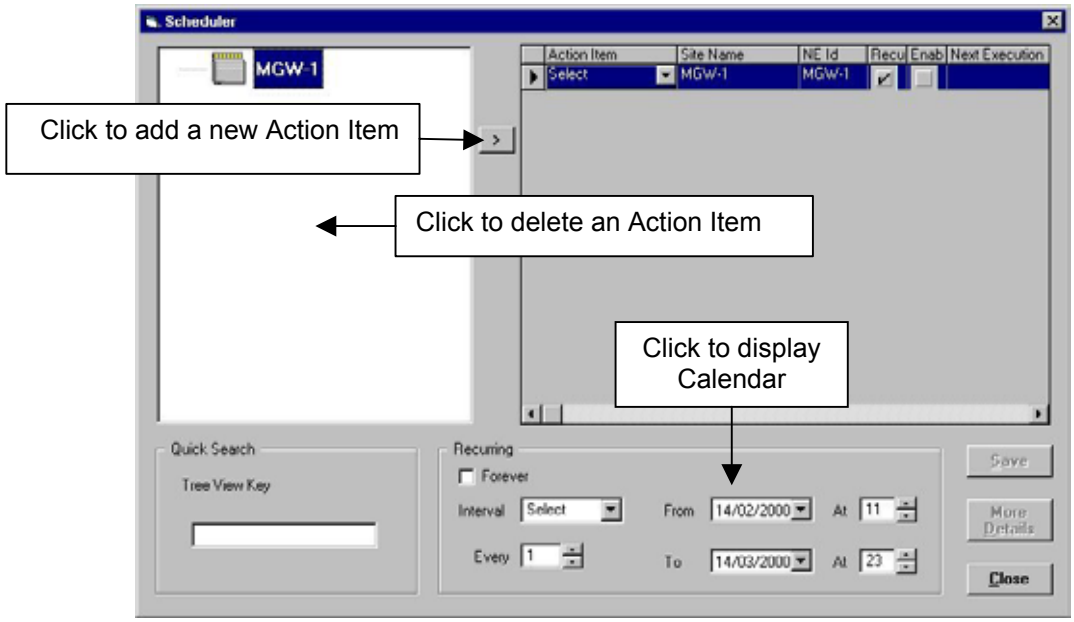


Figure 5-44: Scheduler Dialog Window – General View

Initially, the open window displays an undefined Action Item (see "Select" – Figure 5-44).

To modify the Scheduler:

1. Click the button under Action Item to display the drop down Action Item list box:

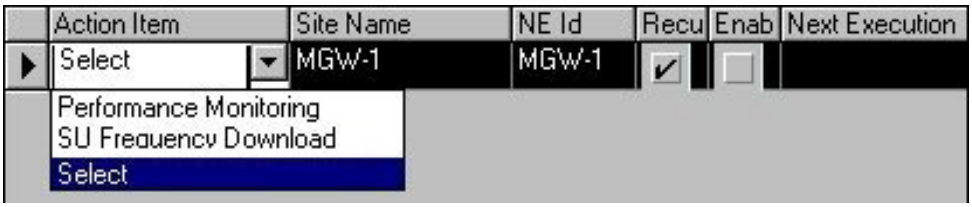


Figure 5-45: Action Item List Box

Click (select) the SU Frequency Download item.

2. Remove (double-click) the check mark from the Recu column button to disable recurring mode.

3. Check (double-click) the Enab column button to enable the "More Details" button in the lower left window (Figure 5-44).

4. Click the "More Details" button to display the SU Frequency Download Edit dialog window:

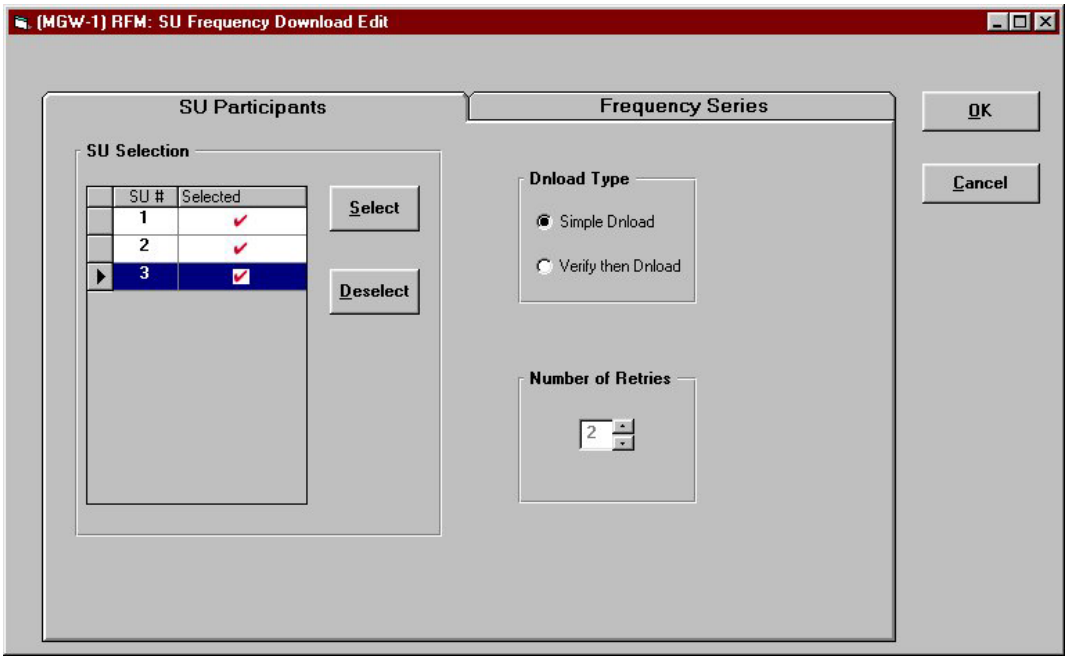


Figure 5-46: SU Frequency Download Edit (SU Participants)

By default, all SU's in the SU Selection table are shown as selected.

5. Before selecting SU's (participants), the user must verify the active status of the selected SU's by referring to the SU map (see Figure 9-2).

6. The SU series must comprise consecutive numbers, for example, 1, 2, 3, (see Figure 5-46). A sequence numbering: 2, 3, 5, would be invalid.

7. To select/deselect an SU or group of SU's, mark the respective SU/SU's and click the appropriate Select/Deselect button. SU's are marked as follows:
   - To select an item, place the cursor in the empty cell to the left of the required SU row and click the left mouse button.
   - To select consecutive alarm items, select the first item and hold down the SHIFT key and click the last item in the required list.
   - To select separate SU items, hold down the CTRL key, and then click each item you wish to select in the cell to the left of the SU row.
8. Select the downloading requirement by clicking the appropriate radio button in the "Dnload" pane:
   - "Simple Dnload," for straightforward downloading, or
   - "Verify then Dnload," to verify before downloading
9. The user can select up to 5 retry attempts in the "Number of Retries" pane.
10. Click the OK button to save SU participants in the database for future frequency download.
11. The next stage is to fix the date and time for the given action item. This can be done either by manually revising the "Date" and "At" fields in the "Once" pane, or by clicking the button to the right of the "Date" field to display the graphic calendar:

Figure 5-47: Date Field

12. Select the required month using the horizontal arrow buttons and click the required date to insert automatically in the "Date" field. Again, use the up and down arrows to the right of the "At" field to designate the time (hour) for the Action Item.

NOTE

Action item tasks operate on an hourly basis.

IMPORTANT

To get the Scheduler to act immediately, schedule the action on the hour preceding the current time. For example, if the current time is 16:34, schedule the action for 16:00. The Scheduler will perform the action within a matter of minutes.

13. Click the Save button in the lower right corner of the screen to save the defined Action Item:

Figure 5-48: Saved Action Item

14. Now, add a new Action Item to the list by clicking the designated arrow button (see Figure 5-44).

Action Items can be removed by highlighting the given item and clicking the designated arrow button (see Figure 5-44) to display:

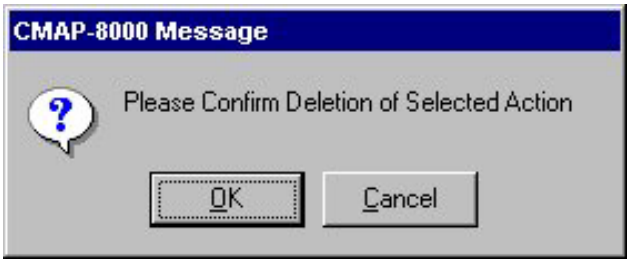


Figure 5-49: CMAP-8000 (Confirm Deletion) Message Window

When all the required Action Items have been defined, click the Close button close the Scheduler and return to the previous screen.

Scheduler Log

Click the Configuration>Provisioning>Scheduler Log menu item to display the Scheduler Log Details dialog window:

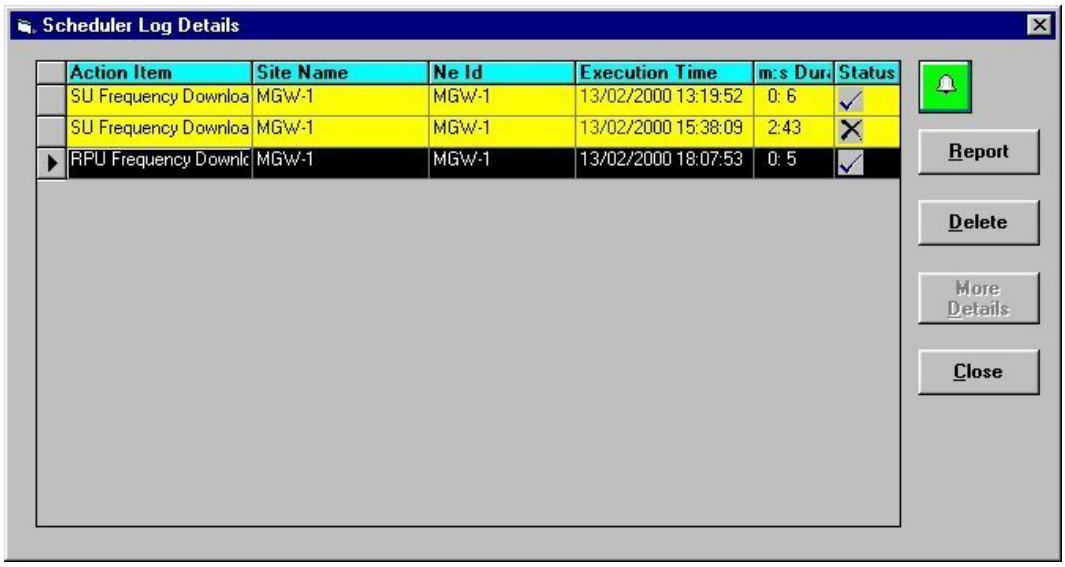


Figure 5-50: Scheduler Log Details Dialog Window

This window displays a log of the results of Action Items specified in the Scheduler. The Status column will display either success (✓) or failure (×) depending on the Action outcome.

If status indicates failure, click the enabled "More Details" button to display the SU Frequency Download Edit dialog window which now includes a Fault field showing the relevant fault codes:

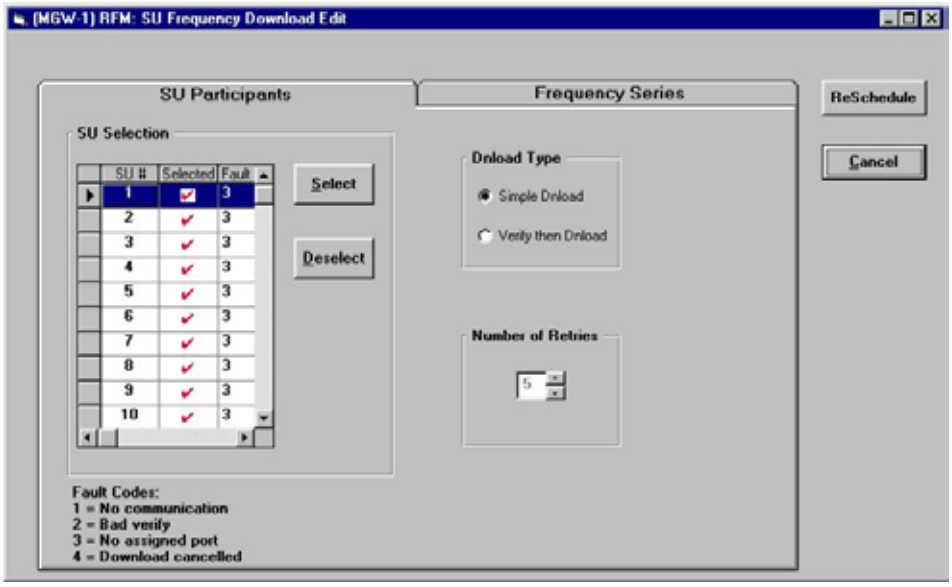


Figure 5-51: SU Frequency Download Edit Window (plus Fault Field)

The Scheduler Log Details dialog window enables the user to reschedule failed actions via the "More Details" function.

When a scheduled task is executed, a minimized window appears in the Windows toolbar. Click the minimized window to restore the SU Frequency Download Status window:

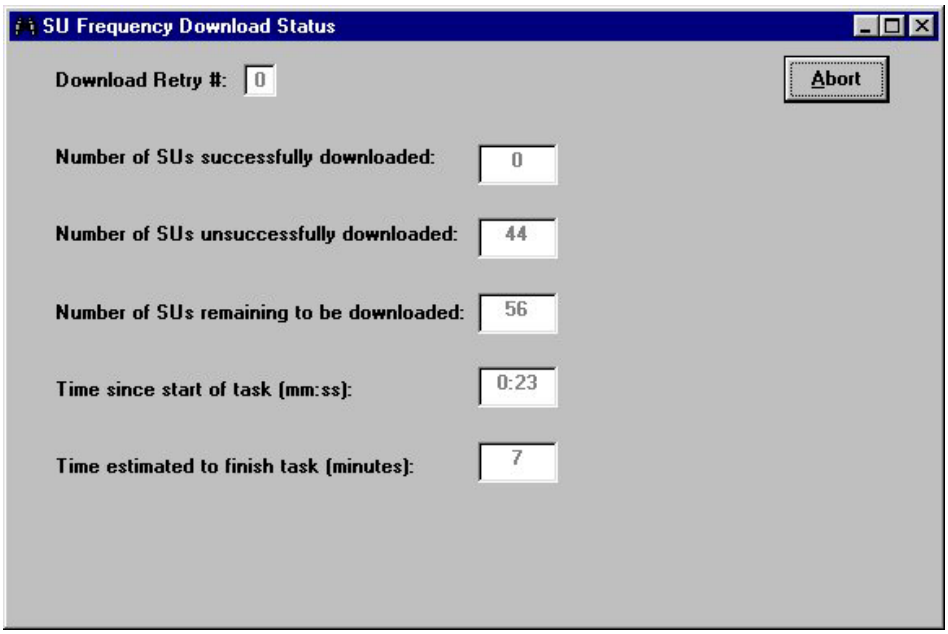


Figure 5-52: Frequency Download Status Window

While frequency download is proceeding the Abort button is enabled, to allow the user to abort the procedure if desired.

The bell icon in the top right corner of the Scheduler Log Details dialog window will start to oscillate as soon as the Scheduler starts to execute an Action Item.

Sub\SU Declaration

The Sub/SU Declaration menu item combines in a single window.

The menu item is enabled when either the RPCU or SU objects are highlighted.

The Subscriber Allocation and SU Operations window incorporates 5 operational modes accessed by clicking their respective tabs:

- Select
- RPU/RPC-ISDN
- Connections
- Registration
- Status

Select Mode

Click the Sub/SU Declaration menu item to display the Subscriber Allocation and SU Operations window:

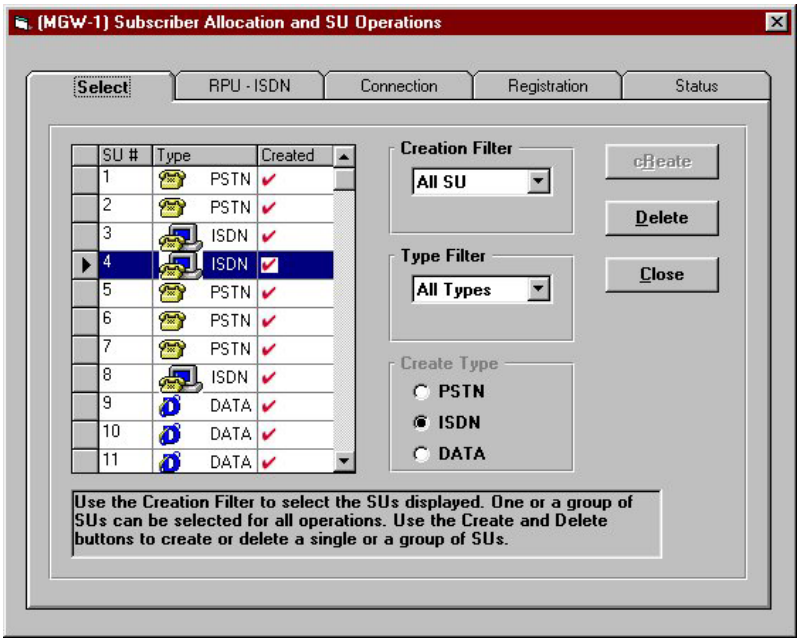


Figure 5-53: Subscriber Allocation and SU Operations Window (Select)

The Select mode enables selection of one or more SU's for subsequent operations, including Create, Delete, RPU/RPC-ISDN, Connect and Registration.

Create

You can select individual, consecutive or separate SU items as required:

To select SU items:

1. To select an item, place the cursor in the empty cell to the left of the required SU row and click the left mouse button to place an arrow in the cell.
2. To select consecutive alarm items, select the first item and hold down the SHIFT key and click the last item in the required list.
3. To select separate SU items, hold down the CTRL key, and then click each item you wish to select in the cell to the left of the SU row.

The Creation Filter combo box allows you to list SU's according to:

- (SU's) Created
- (SU's) Not Created
- All SU

The Type Filter combo box allows you to display SU's according to type:

- PSTN
- ISDN
- DATA
- All Types

Click the appropriate radio button in the Create Type pane, as required:

- PSTN
- ISDN
- DATA

Groups of SU's can also be selected by entering the first and last SU numbers of the Groups in the From and To fields in the Group Selection pane.

Delete

To un-create one or more SU's, highlight the particular SU('s) and press the Delete button to complete the operation.

Connection Mode

Click the Connection tab to display current Connection status of selected SU's:

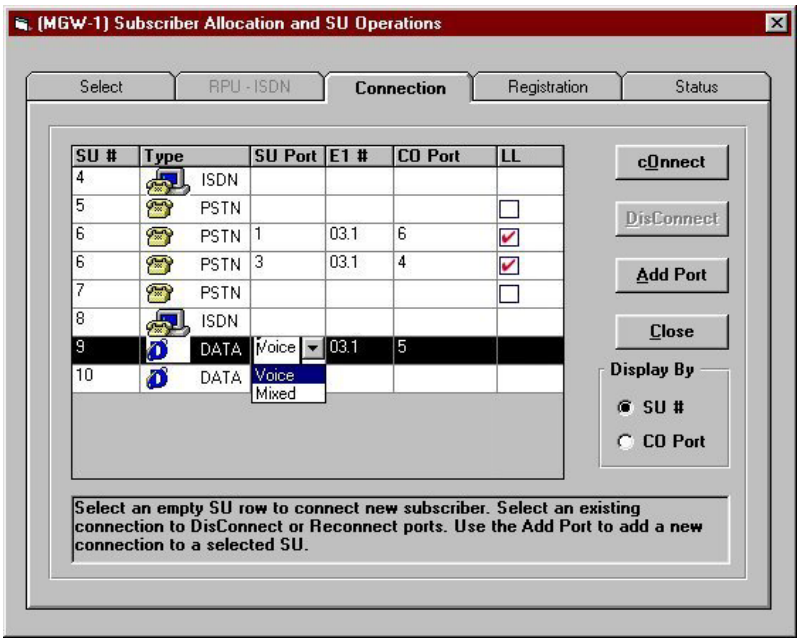


Figure 5-54: Subscriber Allocation and SU Operations Window (Connections)

This mode can display according to SU# or CO Port. Check the appropriate box in the Display by pane.

If *Display by SU#* is selected, the mode will display as shown above in Figure 5-54.

The available button operations are described below:

cOnnect SU

Highlight an empty row in the SU list (see above).

Press the cOnnect button to display SU Port, E1# and CO Port combo boxes:

Select the SU Port, E1 # and CO Port consecutively and the respective dropdown boxes will display the available elements only.

PSTN ports can be assigned as Leased Line users by checking the checkbox in the "LL" column (see SU's 6 & 7 in Figure 5-54 above). The network interface type for this feature is 2W Analog (over AIU) or V5.2 Interface type (see *RPCU Card And Interface Setup*).

NOTE

Definition of an LL subscriber should be coordinated in advance between the CO and MGW management operators, as follows:

- LL subscribesr should first be defined in the MGW management system (see above).
- Subscriber user type should be provisioned in the CO management system as a **Semi-Permanent Leased Line** (V5.2 entity).

If an ISDN-type SU is selected, the SU Port option is BRI only.

The CO Port starts from the "upper limit," defined above

If a DATA-type SU is selected, the SU Port choice is between "Voice" and "Mixed."

The cOnnect button is replaced by the Apply button.

Select the required values and press the Apply button to complete the operation.

The ReConnect button replaces the Apply button.

ReConnect SU

Highlight a "connected" row in the SU list and press the ReConnect button to repeat the cOnnect SU operation, thus changing a connected port(s) with new connections. The CMAP "Accepted" message popup window appears. Press **OK** to display the CMAP 8000 message: "Data changed! You have to update Customer Details too."

Press **OK** to return to the previous screen.

DisConnect SU

Highlight a "connected" row in the SU list and press the DisConnect button to disconnect the selected SU.

Add Port

To connect an additional port, highlight an appropriate SU from the SU list and press the Add Port button to display an empty row beneath the highlighted row.

This operation assumes available vacant ports.

NOTE

Connect or ReConnect operations can be cancelled by pressing the Cancel button.

Connect and DisConnect operations can also be performed in the Display by CO Port mode. Check the CO Port box in the Display By pane to display the Connection mode (by CO Port):

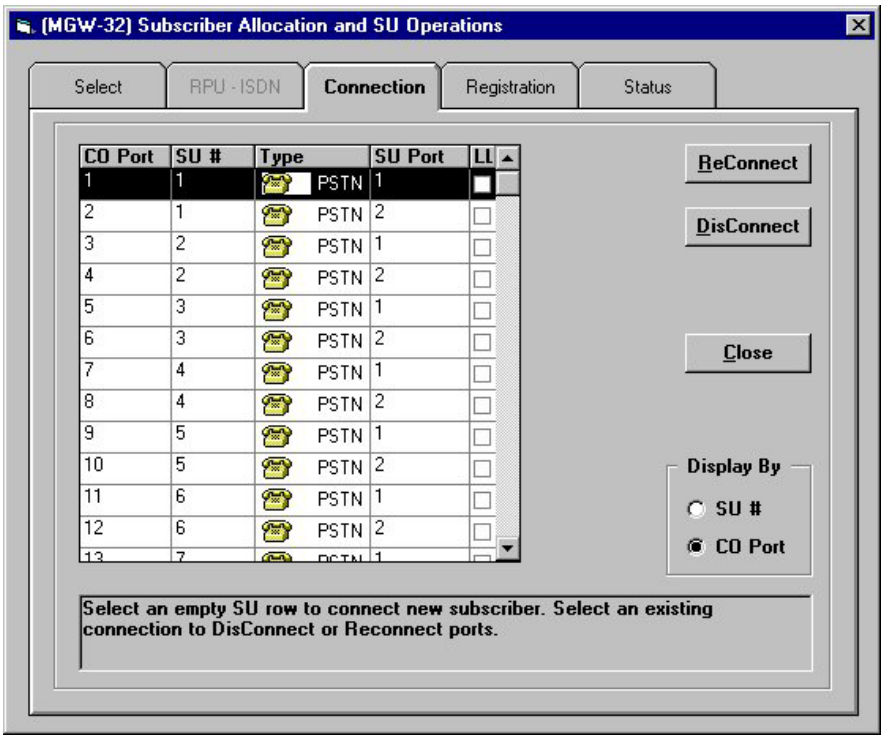


Figure 5-55: Subscriber Allocation and SU Operations Window (Connection)

In the case of a single E1, a "Select E1" pane appears, incorporating a dropdown list box.

The available button operations are described below:

cOnnect SU

Highlight an empty row in the CO Port list (see above).

Press the cOnnect button to display SU# and SU Port combo boxes:

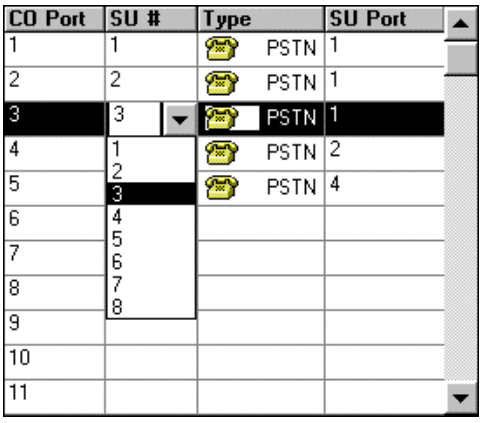


Figure 5-56: SU# and SU Port Combo Boxes

The cOnnect button is replaced by the Apply button.

Select the required values and press the Apply button to complete the operation.

The Apply button is replaced by the ReConnect button.

ReConnect CO Port

Highlight a "connected" row in the CO Port list and press the ReConnect button to repeat the cOnnect CO Port operation.

DisConnect CO Port

Highlight a "connected" row in the CO Port list and press the DisConnect button to disconnect the selected CO Port.

An alternative E1 can be selected from the Select E1 drop down combination box.

NOTE

Connect or ReConnect operations can be cancelled by pressing the Cancel button.

RPU/RPC-ISDN Mode

If only ISDN-type SU's were selected in the Select Mode, the RPU/RPC-ISDN tab is enabled. Click the RPU/RPC-ISDN tab to display the current RPU/RPC-ISDN status displayed according to SU#:

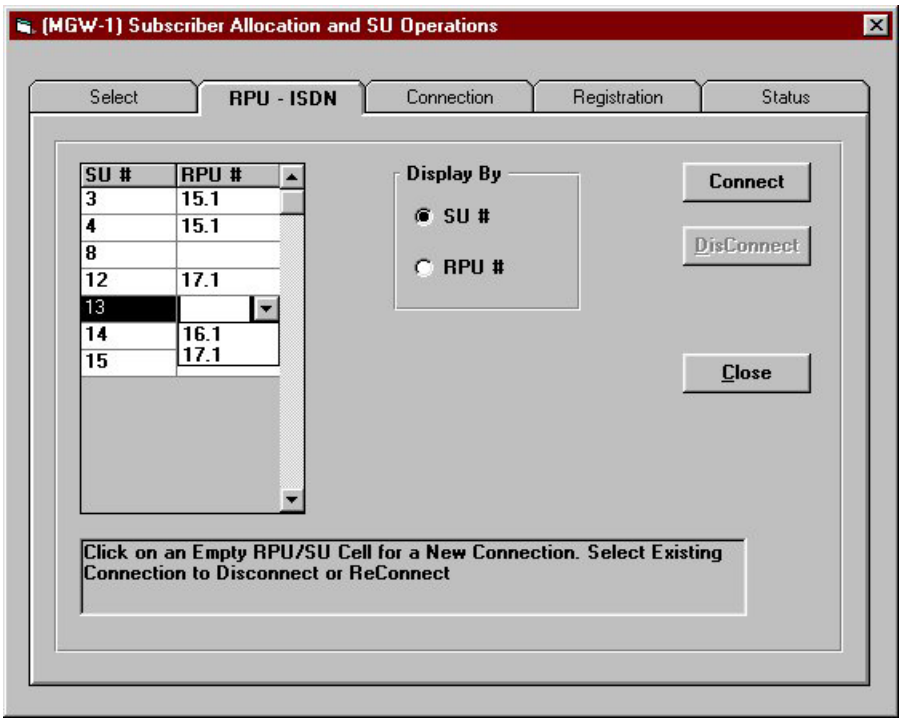


Figure 5-57: Subscriber Allocation and SU Operations Window (RPU/RPC-ISDN) I

Two SU's can be connected to the same RPU/RPC. In the Display By pane, click the RPU/RPC # radio button to display:

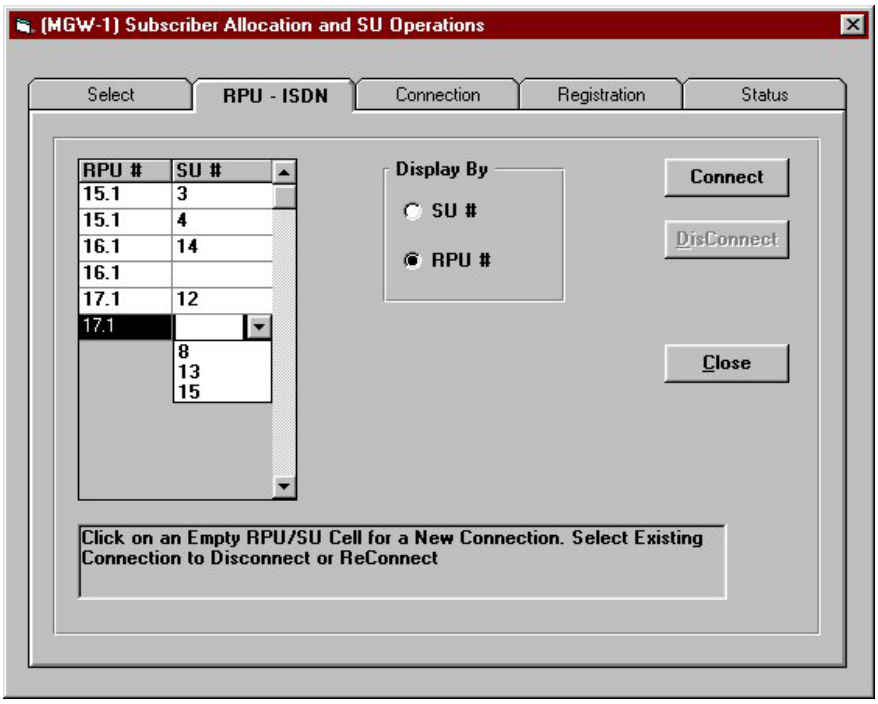


Figure 5-58: Subscriber Allocation and SU Operations Window (RPU/RPC-ISDN) II

Connect all available SU's as required.

NOTE

The user is recommended not to select too many SU's for connection as the transfer to Connection mode can be time consuming.

Registration Mode

This mode can display according to SU# or Registration status. Check the appropriate box in the Display By pane.

Click the Registration tab to display the Registration mode (SU#):

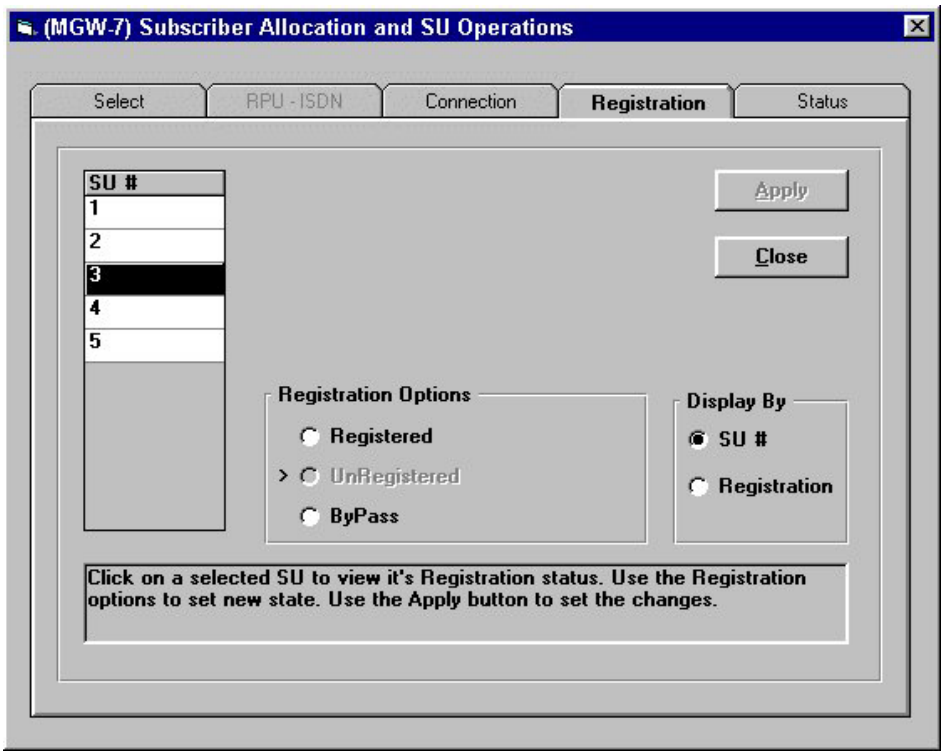


Figure 5-59: Subscriber Allocation and SU Operations Window (Registration)

SU registration options are: **Registered**, **UnRegistered** and **ByPass**, where SU's are active but not registered, enabling technical work to be carried out during installation, or for users that do not require registration and authentication.

Select a given SU from the SU list and note its Registration status.

In Figure 5-59, SU# 6 shows as UnRegistered (note the ">" sign and gray typeface).

The Registered and ByPass Registration options are enabled.

To register SU# 6, check the Registered box to open the TID (Terminal ID) box.

Enter in the appropriate SU hex number in the TID box (8 characters combining numerals 0 to 9, and letters A to F).

Press the Apply button (initially disabled) to confirm acceptance from the CraftMap.

NOTE

If the SU is already registered, the TID will display the corresponding number from the RPCU database.

To UnRegister a Registered SU, highlight the given SU and press the Apply button to complete the operation.

SU registration operations can also be performed in the Display by Registration mode.

Check the Registration box in the Display By pane to display:

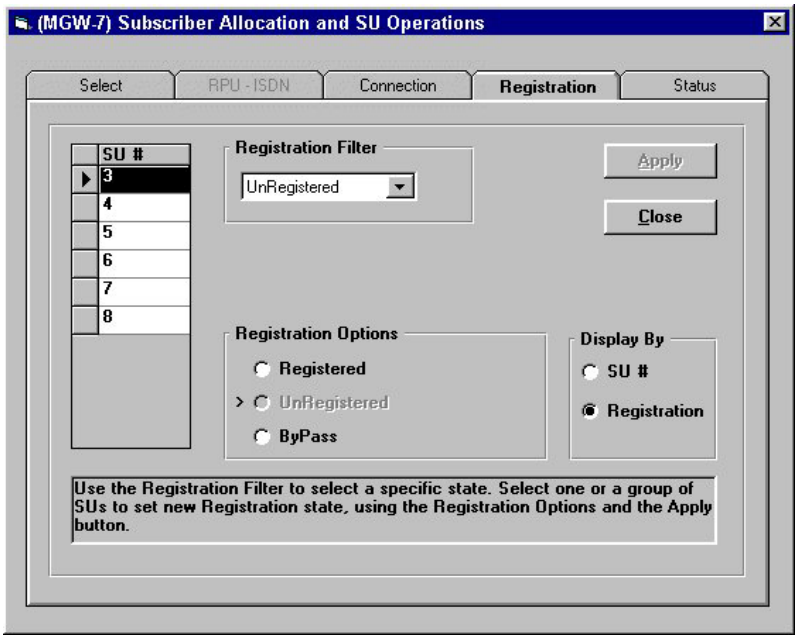


Figure 5-60: Subscriber Allocation and SU Operations Window (Registration)

List SU's by Registration status using the Registration Filter combo box:

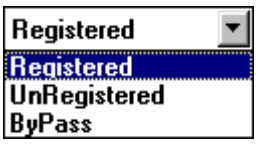


Figure 5-61: Registration Filter Combo Box

Highlight an SU from the SU# list and check the enabled option in the Registration Options pane. Follow the procedure as described above for the SU# Display By mode.

To define a consecutive group of SU's, use the up/down arrows in the From/To fields in the Group Selection pane.

Status Mode

Click the Status tab to display the Status mode (SU#):

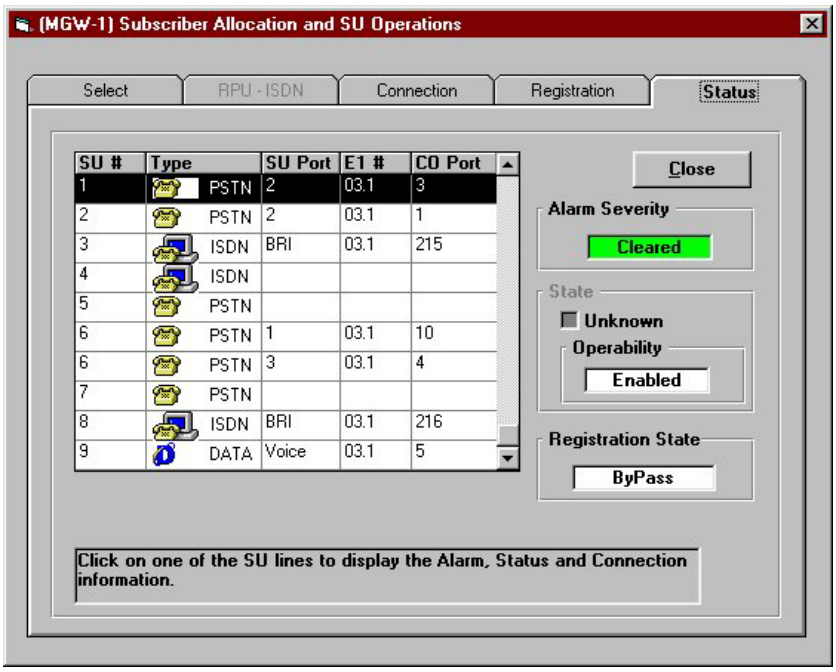


Figure 5-62: Subscriber Allocation and SU Operations Window (Status)

The Status mode display enables us to check on selected SU status in terms of:

- Alarm Severity
- Operability
- Registration State
- E1 and CO Port Connection

NOTE

If an ISDN-type SU is selected the RPU/RPC connection status is indicated in the pane below.

Configuration → Status & Control

Click the "Configuration" item in the Main Menu to open the drop-down menu.

Click the "Status and control" item to display the sub menu items:

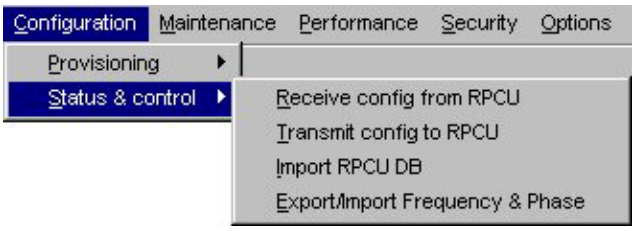


Figure 5-63: Configuration Item in the Main Menu

CAUTION

Extreme caution is advised when applying the "Receive/Transmit config from/to RPCU" commands described below. Improper use can cause damage to all subscriber RPCU connections.

Contact Technical Support or Alvarion Help Desk for further advice and information.

The user can preserve RPCU provisioning in a file on disk or diskette in the event of maintenance, change of software versions, system crash, etc. The user can locate the preserved provisioning to the RPCU by just pressing a button instead of having to redefine parameters and loading data.

IMPORTANT

Important: Before installing the latest version of CraftMap, carry out the Receive config from RPCU operation using existing CraftMap Version. This completed, install the latest CraftMap Version 2.2 and carry out the Transmit config to RPCU using the new CraftMap.

Receive config from RPCU

Click the Receive config from RPCU to display:

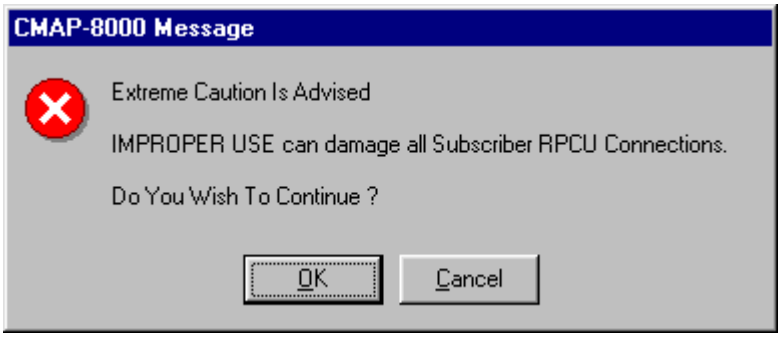


Figure 5-64: CMAP-8000 (Cautionary) Message Pop-up Window

Note the cautionary message and if you wish to continue, press OK to display the Verify Password pop-up window:

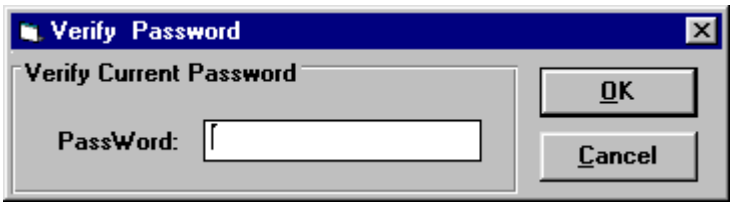


Figure 5-65: Verify Password Pop-up Window

Enter your password and press OK to display the Backup Configuration pop-up window:

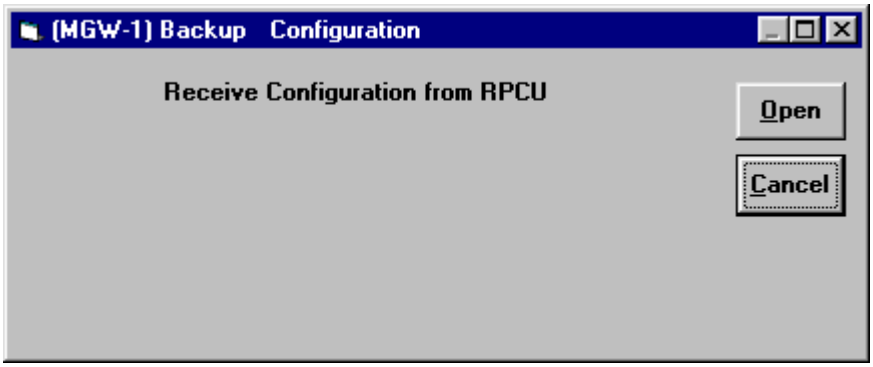


Figure 5-66: Backup Configuration Pop-up Window

Press the Open button to display the Open Receive File pop-up window:

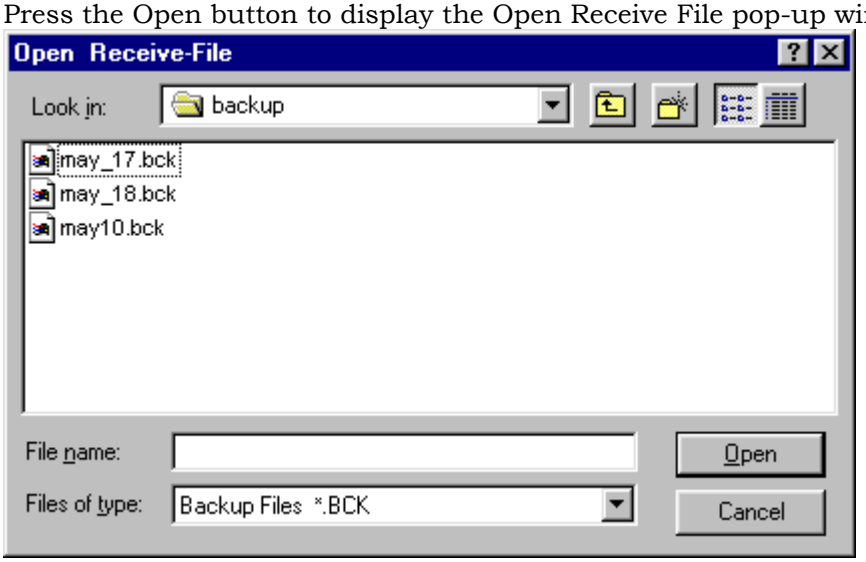


Figure 5-67: Open Receive-File Pop-up Window

Select the appropriate *.bck file and press Open to retrieve the file.

If you tried to retrieve an illegal file entry, an error message pop-up window is displayed:

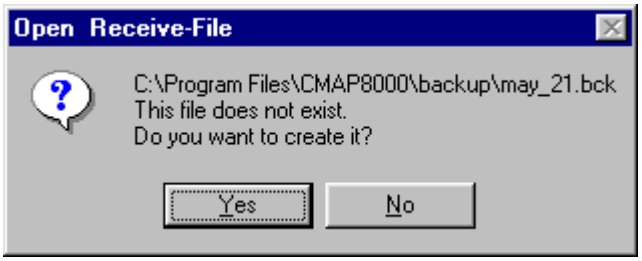


Figure 5-68: Open Receive-File (Error Message) Pop-up Window

If you wish to create a new back-up file, press Yes, to signal the system to execute receipt of configuration from the RPCU:

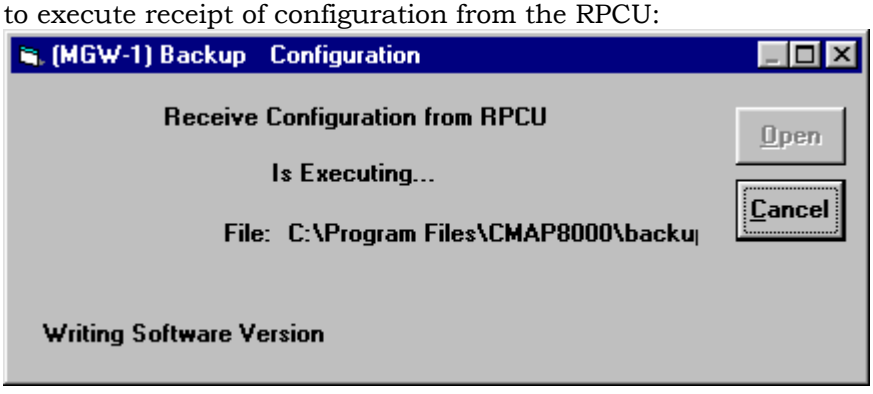


Figure 5-69: Backup Configuration (RPCU Executing) Pop-up Window

As Backup is executed and the appropriate configuration is being received from the RPCU and the backup file name is displayed. The operation can be suspended at any time during execution by pressing the “Cancel” button.

When backup is completed, the “End of Receive Configuration” message is displayed.

The Cancel button changes to Close button:

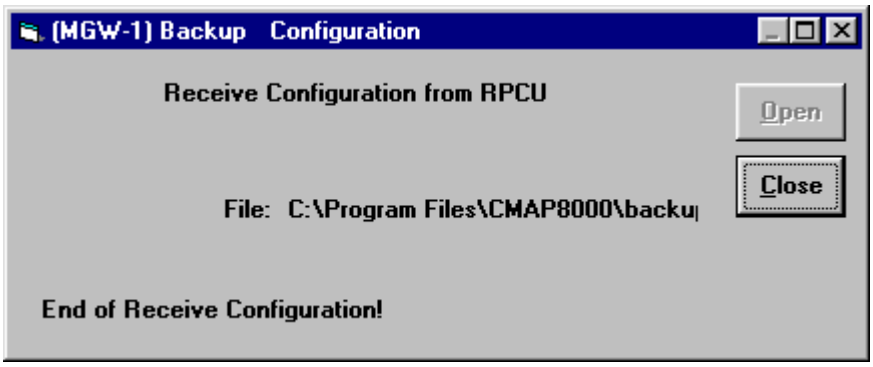


Figure 5-70: Backup Configuration (Completion) Pop-up Window

Press the Close button to return to the Main Screen.

Transmit config to RPCU

Click the Transmit config to RPCU to display the CMAP-8000 cautionary message:

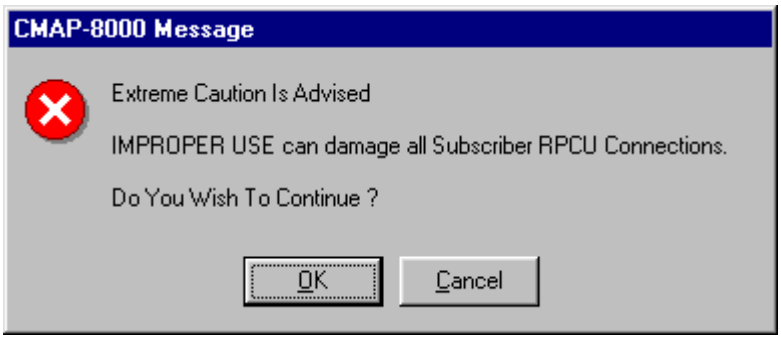


Figure 5-71: CMAP-8000 (Cautionary) Message

NOTE

Users are recommended to implement DB Reset (see *Initialize DB*) before loading the DB file to the RPCU

If you wish to continue, press OK to display the Verify Password pop-up window:

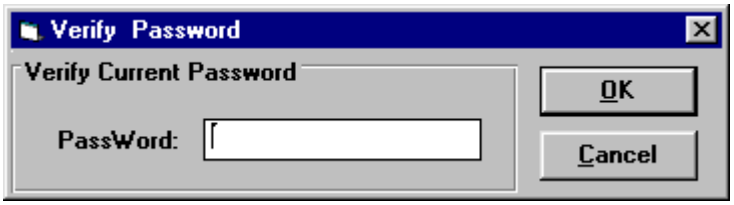


Figure 5-72: Verify Password Pop-up Window

Enter your password and press OK to display the Backup Configuration pop-up window:

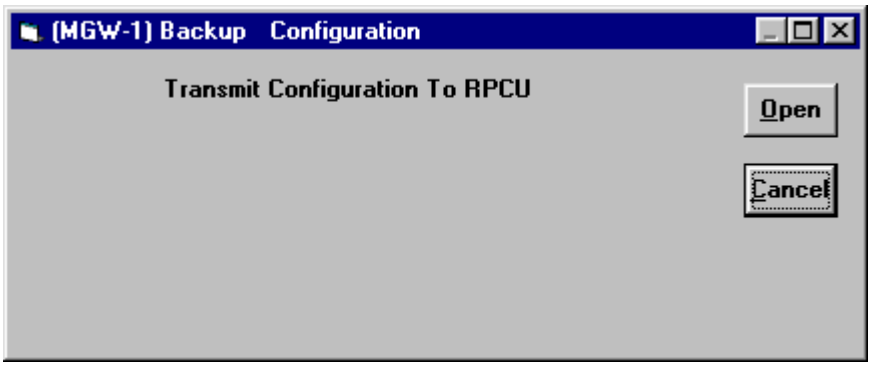


Figure 5-73: Backup Configuration (Transmit. . .) Pop-up Window

Press the Open button to display the Open Transmit-File pop-up window:

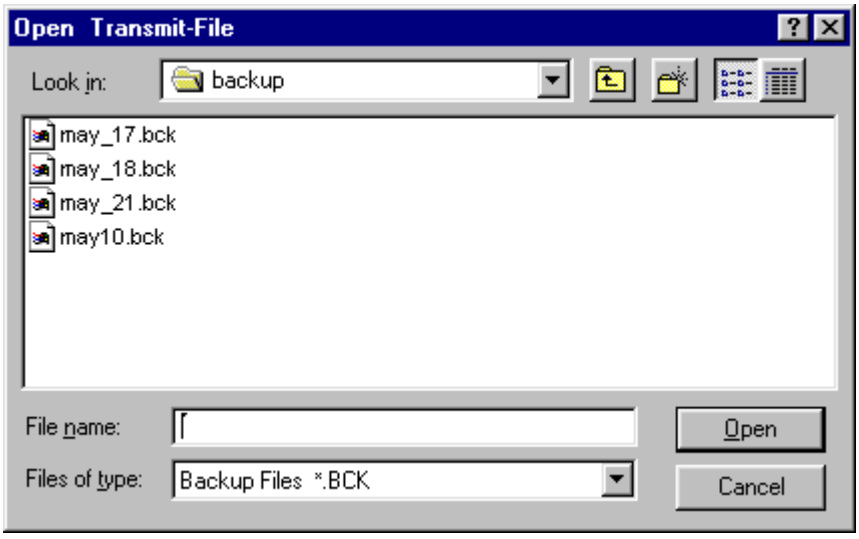


Figure 5-74: Open Transmit-File Pop-up Window

NOTE

The file to be transmitted must be current and bear a *.bck extension.

Mark the file by clicking on the file name. Check that the file you selected now appears in the "File Name:" box and press the Open button to display the following system message:

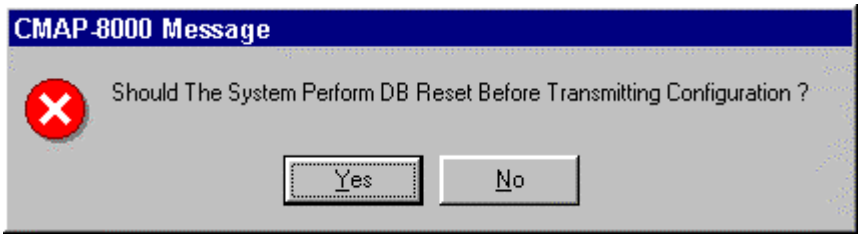


Figure 5-75: CMAP 8000 Message

Press the Yes/No button for the system to perform/not to perform DB reset before transmitting configuration.

NOTE

Users are strongly recommended to select the Yes button, otherwise, elements from previous configurations are retained and will attach themselves to the new configuration.

If the pre-defined configuration has undergone revision in the interim, pressing the Yes/No button in the message window (Figure 5-75) will display the following system message:

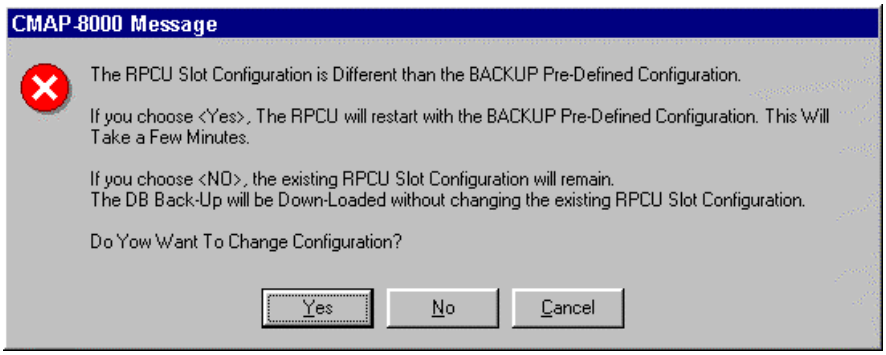

CMAP-8000 Message
The RPCU Slot Configuration is Different than the BACKUP Pre-Defined Configuration.
If you choose <Yes>, The RPCU will restart with the BACKUP Pre-Defined Configuration. This Will Take a Few Minutes.
If you choose <NO>, the existing RPCU Slot Configuration will remain.
The DB Back-Up will be Down-Loaded without changing the existing RPCU Slot Configuration.
Do Yow Want To Change Configuration?
Yes
No
Cancel

Figure 5-76: CMAP 8000 Message

Press the Yes button to restart with the Backup Pre-defined Configuration (recommended).

Press the No button to retain the exisiting RPCU slot configuration.

Either way, pressing the Yes/No button will display the Backup Configuration pop-up window:

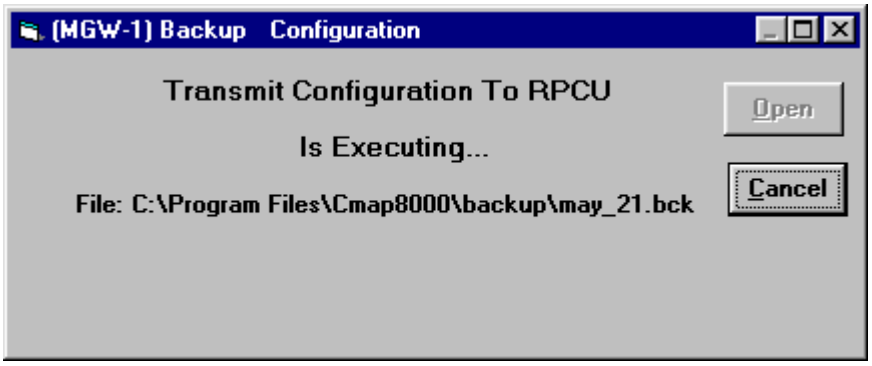


Figure 5-77: Backup Configuration (Executing) Pop-up Window

Press the "Cancel" button if you wish to suspend transmission.

When the transmit configuration to RPCU operation is competed, the "end of transmit" confirmation window is displayed:

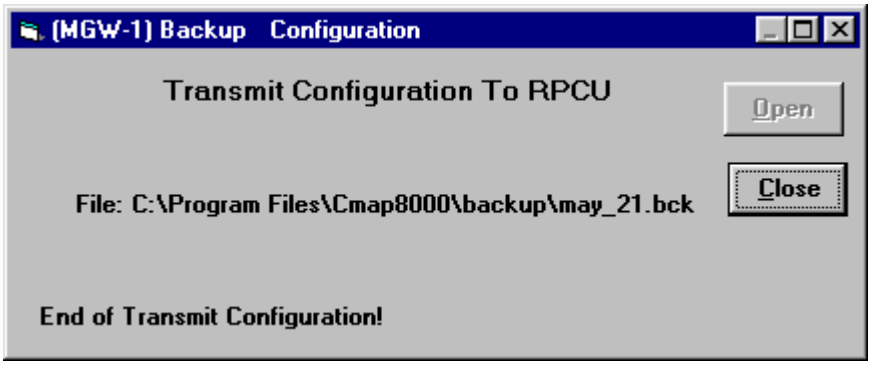


Figure 5-78: Backup (End of transmit) Configuration Pop-up Window

Press Close to return to main screen.

Import RPCU DB

The RPCU Data Base contains the frequency series and other important parameters affecting RPCU operation in terms of site and RPCU number.

Click the Import RPCU DB to display the Import RPCU Data Base dialog window:

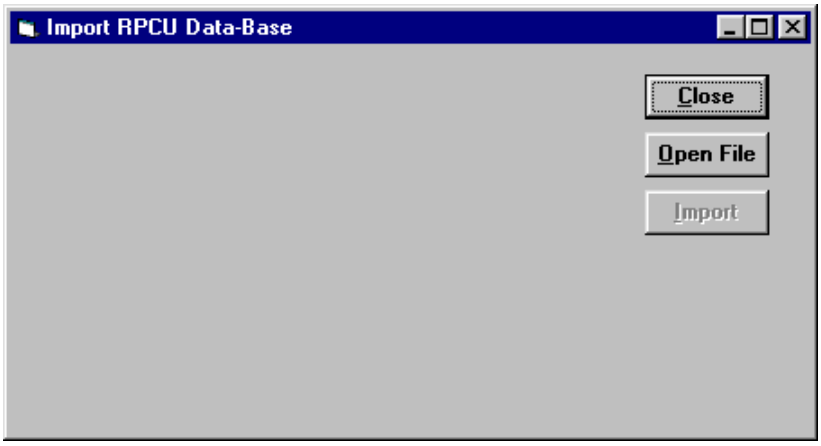


Figure 5-79: Import RPCU Data Base Window

Click the Open File button to display the Import RPCU DataBase Details Files dialog window:

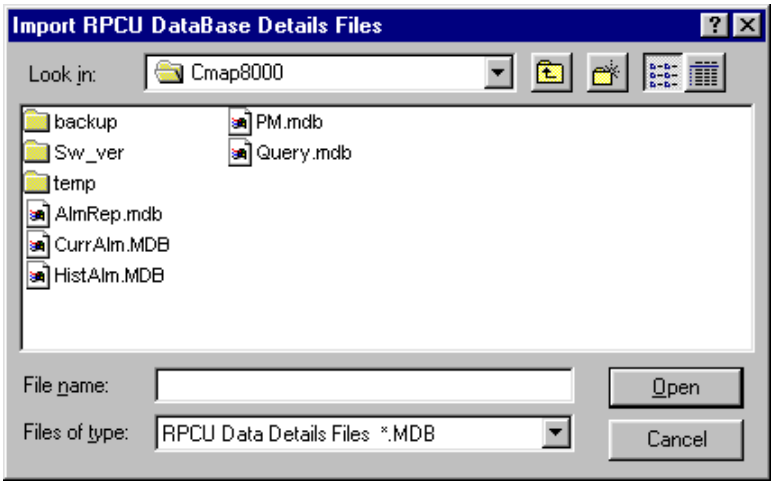


Figure 5-80: Import RPCU DataBase Details Files Window

Select the required file and press OK to restore the Import RPCU Data Base window (Figure 5-79). Press the enabled Import button to complete the operation.

Press the Close button to return to the main screen.

Export Import Frequency & Phase

Click the Configuration>Status & Control>Export/Import Frequency & Phase menu item to display the Import / Export System Frequency & Phase dialog window:

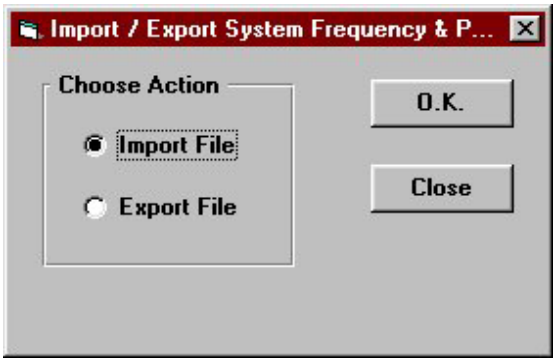


Figure 5-81: Import / Export System Frequency & Phase Dialog Window

Check the required radio button in the Choose Action pane and click the OK button to display the Enter/Select File dialog window:

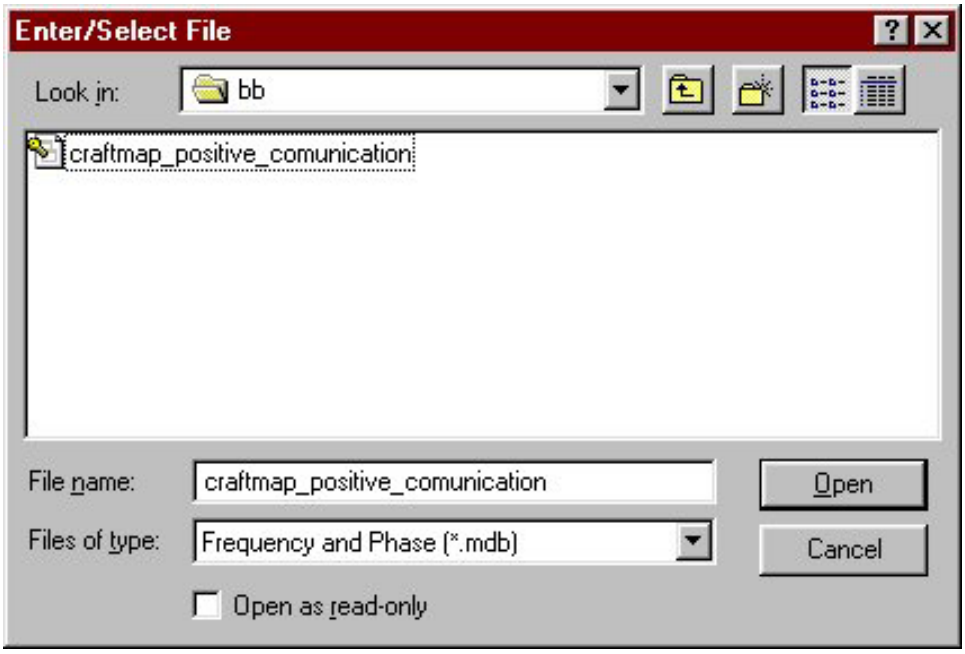


Figure 5-82: Enter/Select File Dialog Window

Select the required file and click the Open button to return to the previous window. If the action was successful, a confirmatory message appears at the bottom of the window:

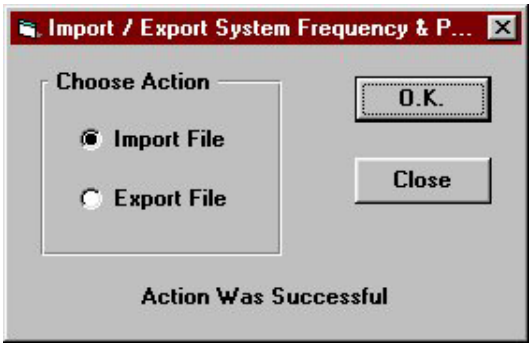


Figure 5-83: Import / Export System Frequency & Phase Dialog Window – "Action Was Successful"

The alternative "Permission denied" message will appear if the action was unsuccessful.

Maintenance

Click the Maintenance item in the Main menu to open the sub menu:

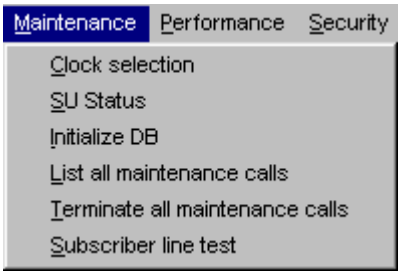


Figure 5-84: Maintenance Item in the Main Menu

Clock selection

Click the Clock selection item to display the RPCU - Clock Select pop-up window:

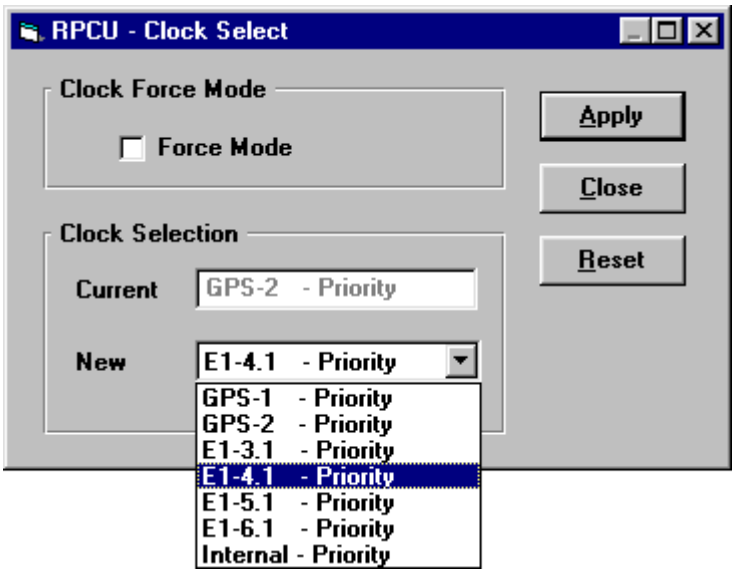


Figure 5-85: RPCU - Clock Select Pop-up Window

The Apply (initially disabled), Close and Reset buttons are defined under Clock Source (Section *Clock source*).

The window is being continuously updated by the current clock..

The Clock Selection frame displays the current clock and drop-down list box, listing seven possible clock sources and corresponding priority levels. The box enables the user to change the clock source as required.

When a new clock source is selected, the Apply button is enabled.

Press the Apply button to display the CMAP Accepted! message:

Figure 5-86: CMAP-8000 (Cautionary) Message

Press the OK button to return to the Clock Select window.

Press Close to return to the main map.

If you wish to disable the automatic clock selection mechanism, check the Force Mode box before applying the new clock selection.

SU Status

Highlight the SU object and click the SU Status item to display the Subscriber Units Status dialog window:

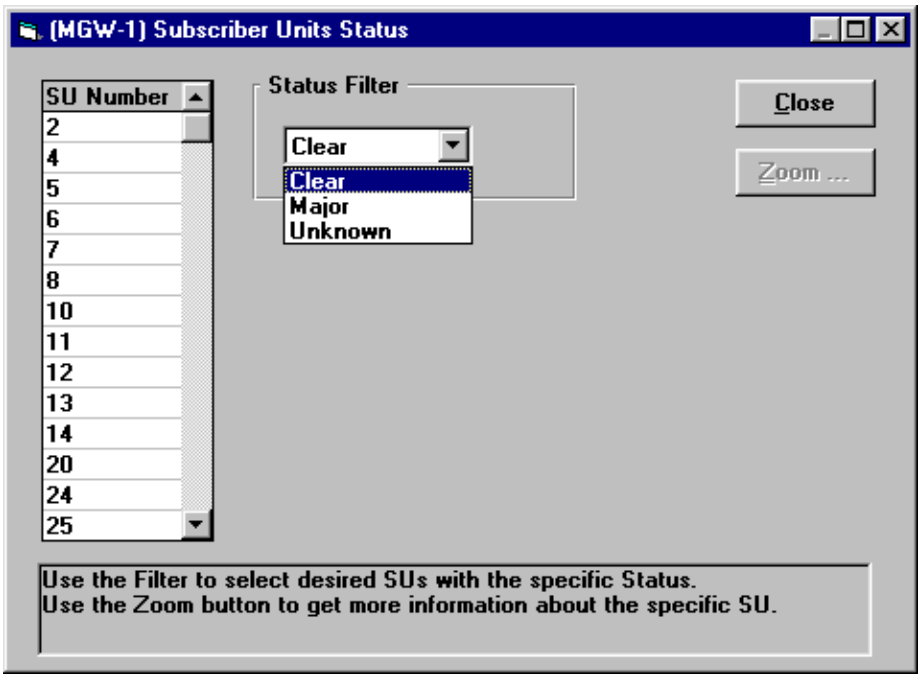


Figure 5-87: Subscriber Units Status Window

NOTE

Hints on how to proceed at the bottom of the window.

Select a filter from the Status Filter drop-down box to display SU's that meet the selected filter criteria:

- Clear - no alarm
- Major - major alarm
- Unknown - unknown alarm

Highlight a selected SU from the SU Number list and press the Zoom... button to display the alarm status of the selected SU (e.g. SU 16):

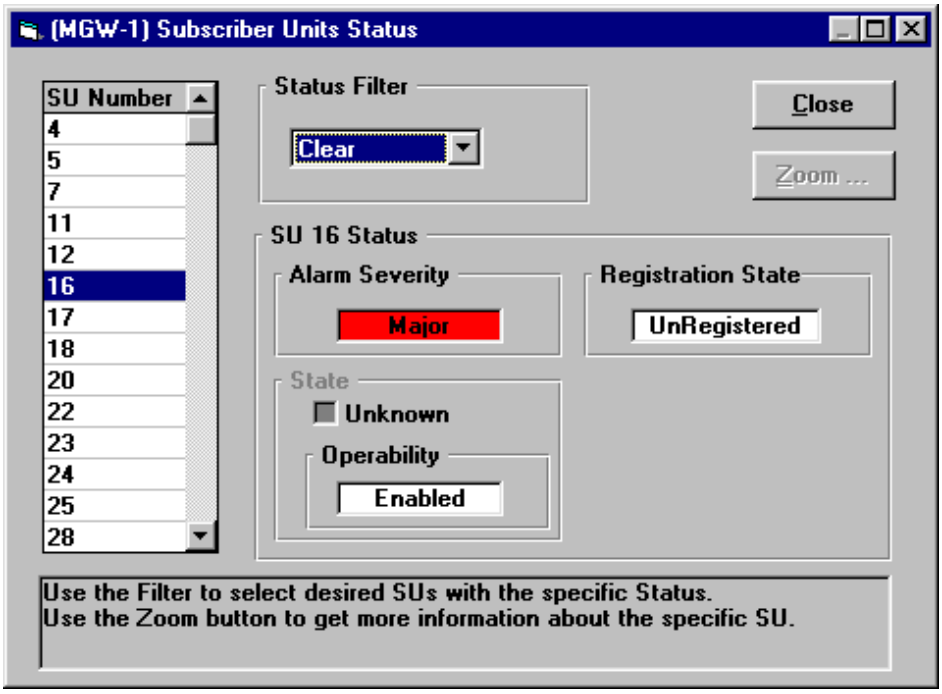


Figure 5-88: Subscriber Units Status Window (plus alarm status)

The alarm status self-corrects in real time.

Press the Close button to return to the main screen.

Initialize DB

This item enables overall system reconfiguration. This being the case, users should apply the item with considerable discretion. If the reset option is selected, ensure that the Network interface and slot configuration is retained (refer to Chapter 4, *RPCU Relocation*).

Click the Initialize DB item to display the Initialize Data Base dialog window:

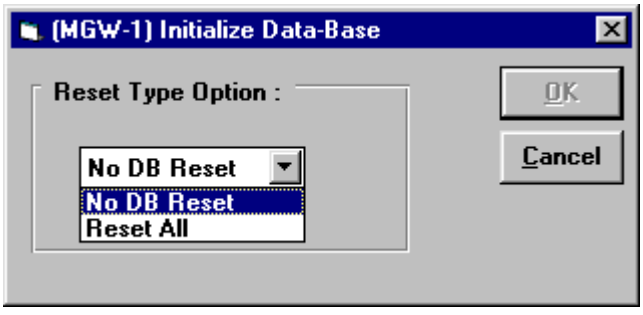


Figure 5-89: Initialize Data Base Window

Select the required Reset Type Option from the drop-down box.

If the “No DB Select” option is selected, press the Cancel button to return to the main screen.

If the “Reset All” option is selected, press the OK button to activate. The user is prompted by a warning pop-up window:

Figure 5-90: CMAP-8000 (Cautionary) Message Window

Press OK if you wish to continue and return to the main screen.

Press Cancel to abandon the operation and return to the main screen.

List all maintenance calls

Click the List all maintenance calls menu item to display the Active Maintenance Call List window:

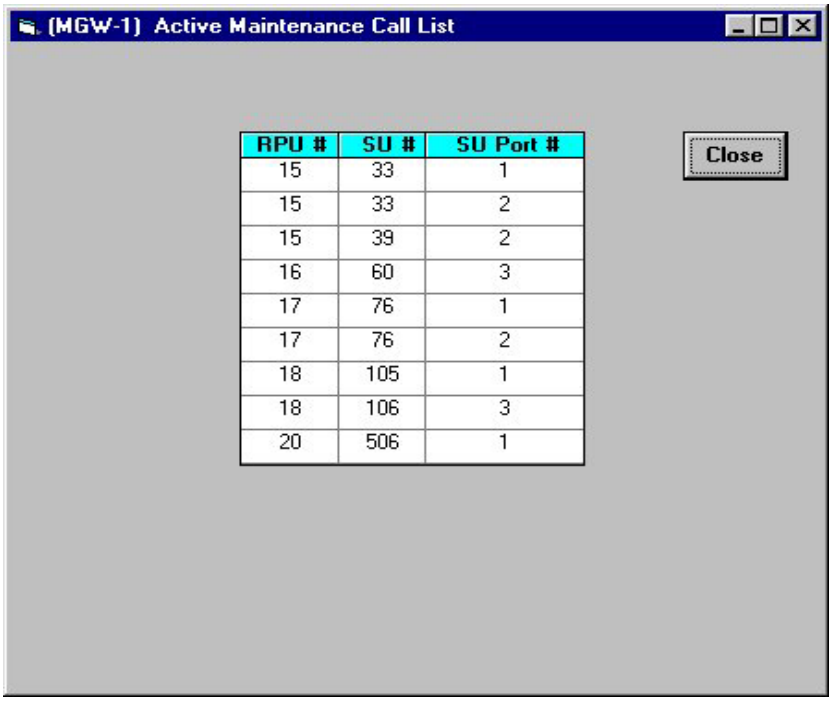


Figure 5-91: Active Maintenance Call List Window

Click the Close button to return to the main map.

Terminate all maintenance calls

Click the Terminate all maintenance calls menu item to terminate all maintenance calls.

Subscriber Line Test (SLT)

The SLT feature provides test capability for the last link in the chain of the connection to the telephone set - the copper wire between the SU and the set, if there is an established connection to that SU port.

Click the Subscriber line test menu item to display the Subscriber Line Test dialog window:

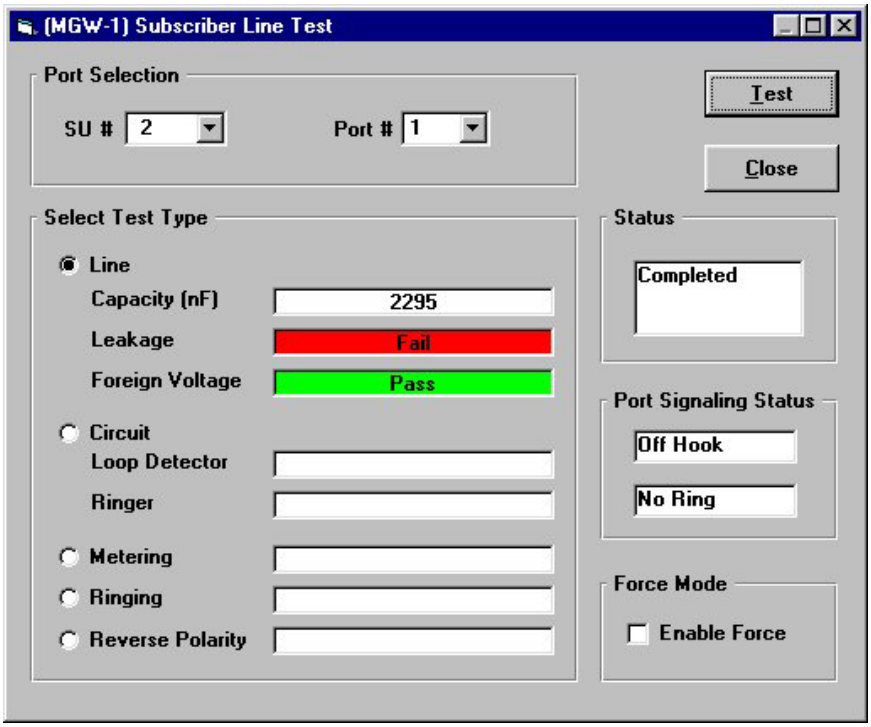


Figure 5-92: Subscriber Line Test Dialog Window I

Define Port Selection according to SU # and Port # (2 and I respectively, as in the example given in Figure 5-92 above) and select test type: Line, Circuit, Metering, Ringing or Reverse Polarity, by clicking the appropriate radio button (e.g., Line in Figure 5-92 above).

The Subscriber Line Test performs the following types of tests on PSTN or DATA type SU's only:

1. Line Electrical Tests for measuring the existence of the telephone and the parameters of the wires between the SU and the telephone. These tests are conducted as a group:
   - Capacity (nF) between Tip to Ring showing the existence of the telephone set
   - Leakage between Tip to Ring
   - Foreign **Voltage** (AC or DC) existence between Tip to Ring.
2. Line Circuit Tests for measuring parameters relating to the functionality of the subscriber's port of the SU. These tests are conducted as a group without disconnecting the call:
   - **Loop Detector** - The loop detection is tested by the connection of a reference resistor across it.
   - **Ringer** Output is measured with no load.
3. Functional Tests of the telephone. These tests are relevant mainly during installation, when the installer is on site and verifies activation of the feature:
   - **Metering** - One metering pulse is applied between the Tip and Ring towards the subscriber equipment. The metering pulse has the parameters set for the SU.
   - **Ringing** - A fixed, MGW defined, 1:4 ringing signal is applied between the Tip and Ring pair, towards the subscriber equipment. The subscriber or the craftsman monitors the telephone ringing.
   - **Reverse Polarity** - A fixed period of reversed feeding voltage polarity is applied between the Tip and Ring pair, towards the subscriber equipment. The craftsman shall monitor the polarity using external equipment.

Click the Test button to activate the test.

NOTE

The test duration is approximately 1 minute.

The results of the test will display in the relevant boxes.

If the Line Circuit test fails, as a consequence of a short circuit, the failure cause is reported as "Invalid – Short circuit" in all Line tests result windows:

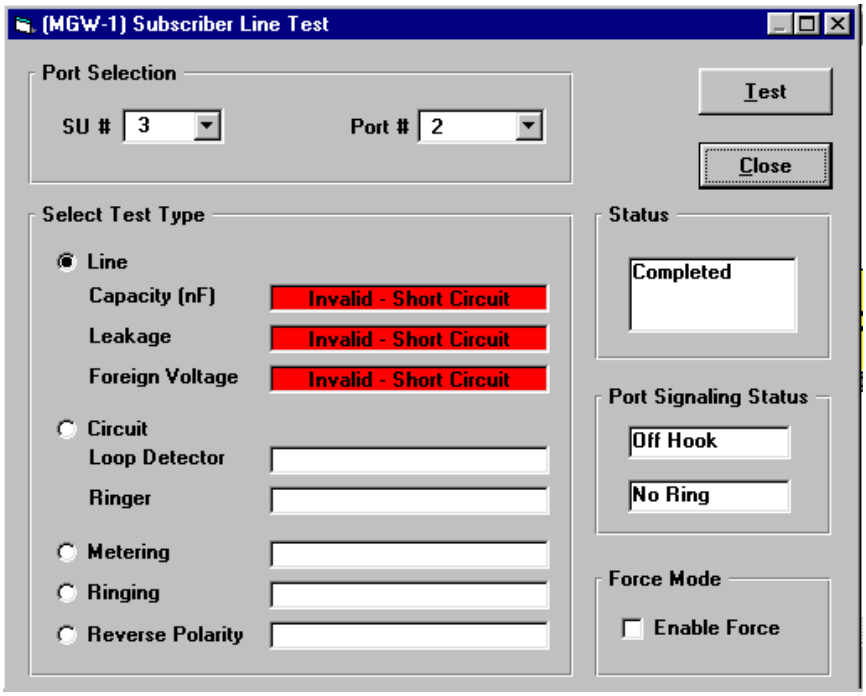


Figure 5-93: Subscriber Line Test Dialog Window II

If the subscriber line is busy, the user can check the Enable Force checkbox to prioritize the test even though the line is in use.

Click the Close button, to return to the main map.

Performance & Traffic Monitoring

General

The CMAP 8000 Version 2.3 reporting represents a significant enhancement from Version 2.2, covering a far wider range of parameters. The additional reports are for:

A. Traffic Volume

B. Call Attempts

C. Lost Calls to All Failures ratio

D. Lost Calls to Per Failure Type ratio

E. Average Traffic intensity

F. Highest Time Slot Occupancies

All reports are based on ITU-T and ETSI recommendations.

For more details on Traffic Monitoring, refer to Appendix E.

The Performance menu item displays as shown below:

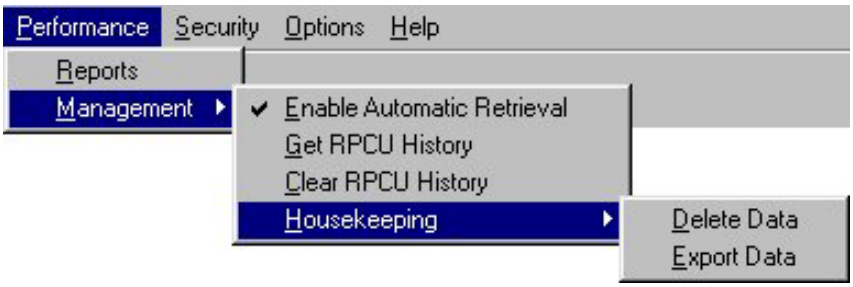


Figure 5-94: Performance Item on the Main Menu

A "✓" sign on the left of the "Enable Automatic Retrieval" item confirms automatic retrieval of PM/TM (Performance/Traffic Monitoring) data. While the data is being retrieved, the PM/TM Data indicator appears on the status bar at the bottom of the screen. When retrieval is complete, the indicator is no longer visible.

If you attempt to exit from CMAP 8000 while the PM/TM Data indicator is on display, you will be prompted by the following cautionary message:

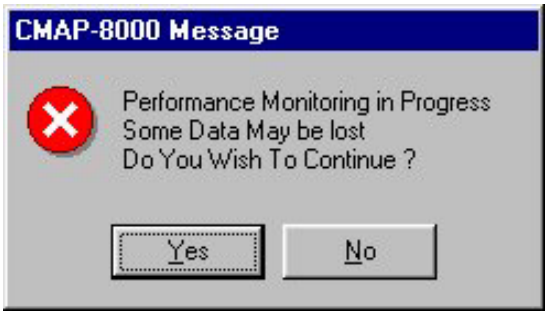


Figure 5-95: CMAP-8000 (Cautionary) Message

The NMI card carries the PM/TM data, repeating the process once every hour. The NMI card can accumulate up to 8 hours of data in the absence of communications or when "Enable Automatic Retrieval" is disabled. When 8 hours have elapsed, the subsequent hour's data replaces the first of the previous 8 hours and so on and so forth.

The Performance menu items are described in the following.

Reports

Click the **Performance > Reports** menu item to display the Performance/Traffic Monitoring Reports interactive window:

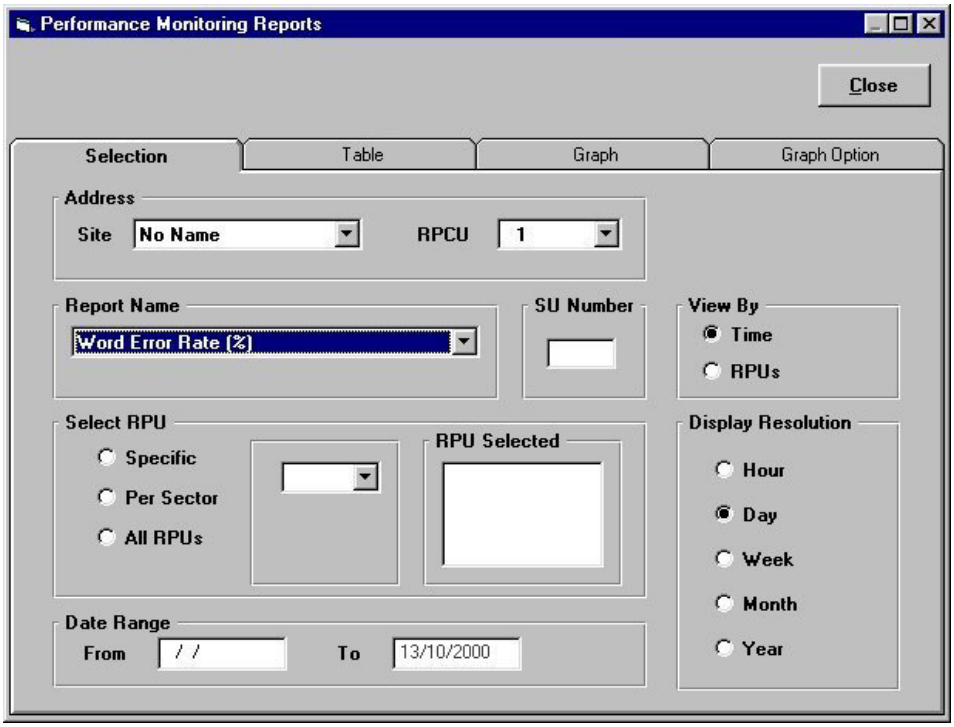


Figure 5-96: Performance/Traffic Monitoring Reports Window

The above window comprises 4 modes: Selection, Table, Graph and Graph Option. Clicking on the respective tab accesses each mode.

Selection

The Selection mode is the default mode on opening the window. This mode allows the user to define the display profile according to the following parameters:

Table 5-3: Display Profile Parameters

Parameter	Description
Address	"No Name" appears automatically in the parameter box. Under SuperOfficemap, site names are listed in the drop-down list box.
RPCU	Select the RPCU number from the corresponding drop-down list box
Report Name (ref: Appendix E)	Select the Report Name from the corresponding drop-down list box. The Report Name options are: ■ Word Error rate (%) ■ Session Time Diversity (%) ■ Received Signal Strength (dBm) ■ Spectrum Analysis – Disturbed Frequencies (%) ■ Antennae Diversity ■ Global Time Diversity ■ Traffic Volume ■ Call Attempts ■ Lost Calls: All Failures (%) ■ Lost Calls: Per Failure Type (%) ■ Average Traffic Intensity ■ Highest Time Slot Occupancies (%)
SU Number(1)	Enter the appropriate SU number
Select RPU/RPC	Select RPU/RPC according to: ■ Specific (RPU/RPC) ■ (RPU/RPC) per sector ■ All RPU/RPCs
Date Range	According to Windows configuration

Working Notes

1. The SU number is defined only for the following Reports:
   - Word Error Rate
   - Session Time Diversity
   - Radio Signal Strength
2. The SU parameter is not required and will not be displayed if the following reports are selected:
   - Spectrum Analysis Distribution
   - Antennae Density
   - Global Time Diversity

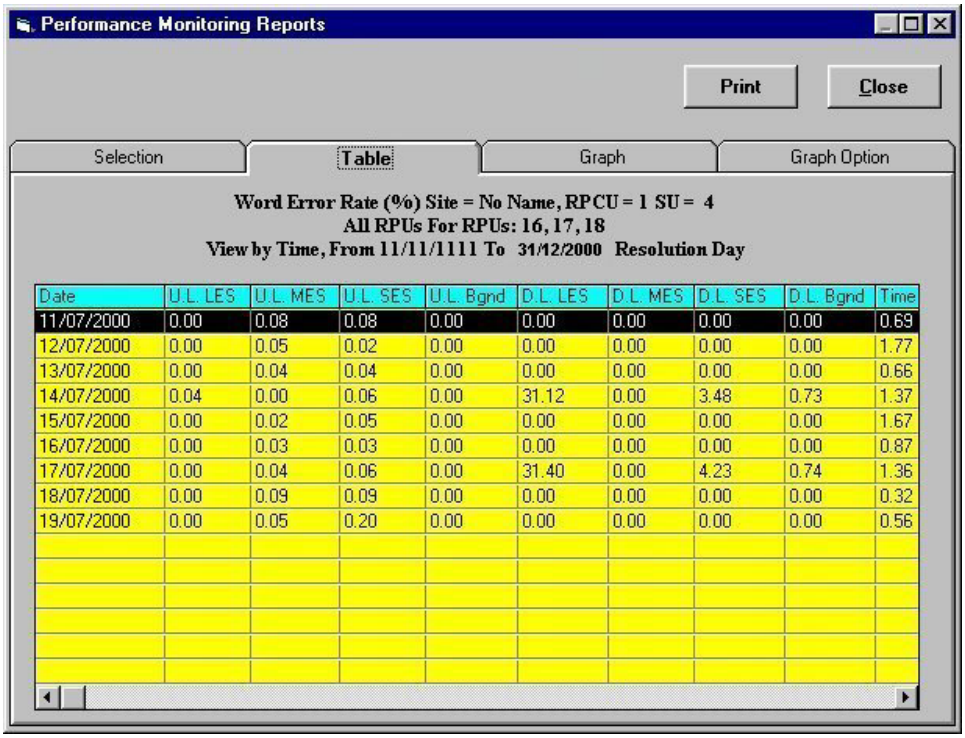
Select the required "View By" option by checking the appropriate Time or RPU/RPCs radio button. If Time is selected, then check the required radio button in the Display Resolution frame immediately below the View By frame. Display Resolution determines with what precision, with respect to time, the data is displayed.

The View By frame will not display if the Spectrum Display Distribution Report is the selected report.

Table

Click the Table tag to display tabulated results for data entered in the Selection mode.

A typical tabulation is shown below:


Performance Monitoring Reports
Print
Close
Selection
Table
Graph
Graph Option
Word Error Rate (%) Site = No Name, RPCU = 1 SU = 4
All RPUs For RPUs: 16, 17, 18
View by Time, From 11/11/1111 To 31/12/2000 Resolution Day

Date	U.L. LES	U.L. MES	U.L. SES	U.L. Bgnd	D.L. LES	D.L. MES	D.L. SES	D.L. Bgnd	Time
11/07/2000	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.69
12/07/2000	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	1.77
13/07/2000	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.66
14/07/2000	0.04	0.00	0.06	0.00	31.12	0.00	3.48	0.73	1.37
15/07/2000	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	1.67
16/07/2000	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.87
17/07/2000	0.00	0.04	0.06	0.00	31.40	0.00	4.23	0.74	1.36
18/07/2000	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.32
19/07/2000	0.00	0.05	0.20	0.00	0.00	0.00	0.00	0.00	0.56

Figure 5-97: Performance/Traffic Monitoring Reports – Table Mode

The input data criteria are summarized above the table and below the tabs (see above). Similar tabulated displays are obtained for all Report options.

Click the Print button to obtain a hard copy of the table from your printer.

Click the Graph tag to obtain a graphical representation of the tabulated results shown in Figure 5-97 above.

Graph

Click the Graph tag to display the graphical representation of the tabulated results shown in Figure 5-97 above:

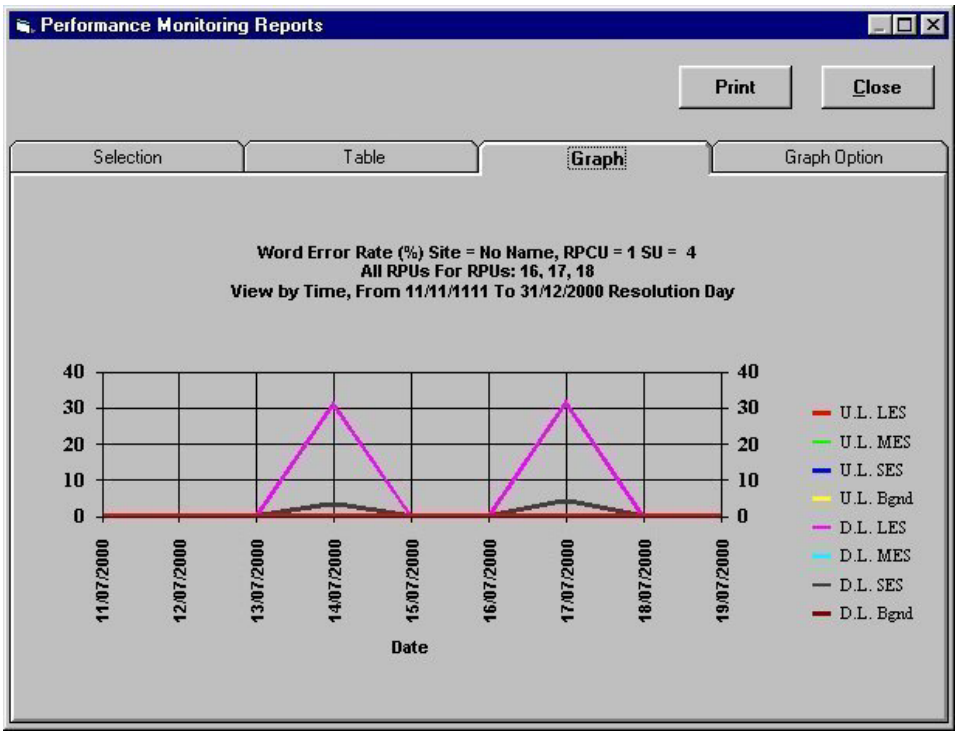


Figure 5-98: Performance/Traffic Monitoring Reports – Graph Mode

Again, the input data is summarized in the space between the tags and the graph itself.

The various curves in the graph are explained by the legend on the right of the graph. Each parameter has a distinctive color for differentiation purposes.

The appearance of the graph can be customized in the Graph Option mode (see Figure 5-102).

Click the Print button to obtain a hard copy of the graph from your printer.

A special case, in terms of graphic representation, is the Antennae Diversity Report:

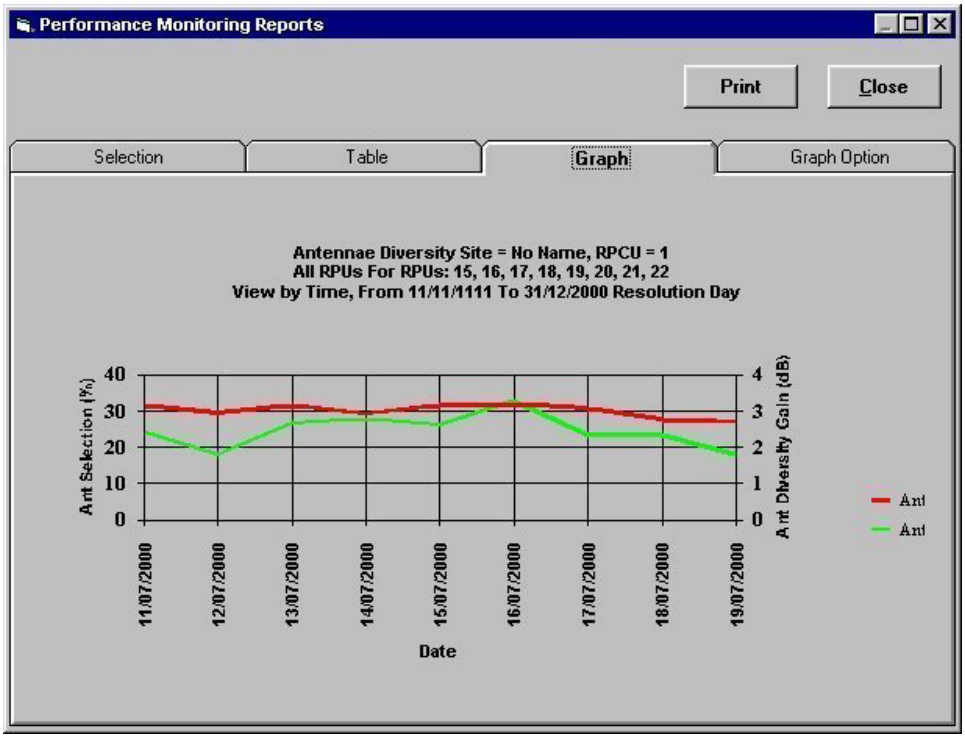


Figure 5-99: Performance/Traffic Monitoring Reports I – (Antennae Diversity)

The two y-ordinates represent Ant. Selection (%) and Ant. Diversity Gain (dB) respectively.

Click on either of the curves generated in Figure 5-99 above to highlight points on the curve:

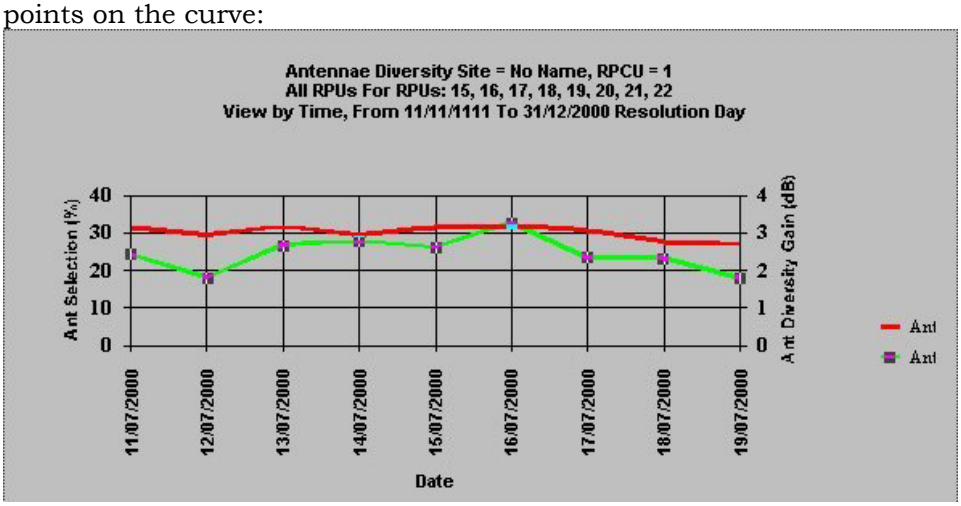


Figure 5-100: Performance/Traffic Monitoring Reports II – (Antennae Diversity)

Click on any of the highlighted points to display the coordinates of the point:

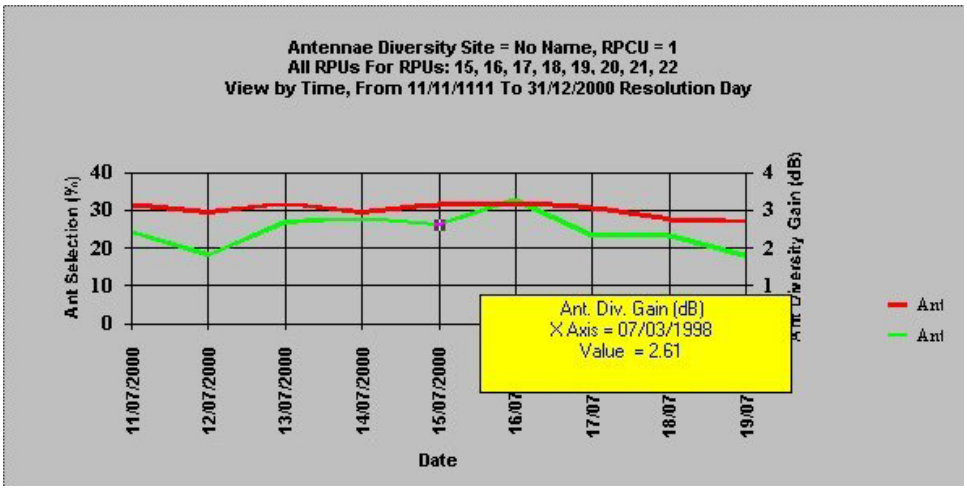


Figure 5-101: Performance/Traffic Monitoring Reports III – (Antennae Diversity)

Graph Option

Click the Graph Option tag to display the respective mode:

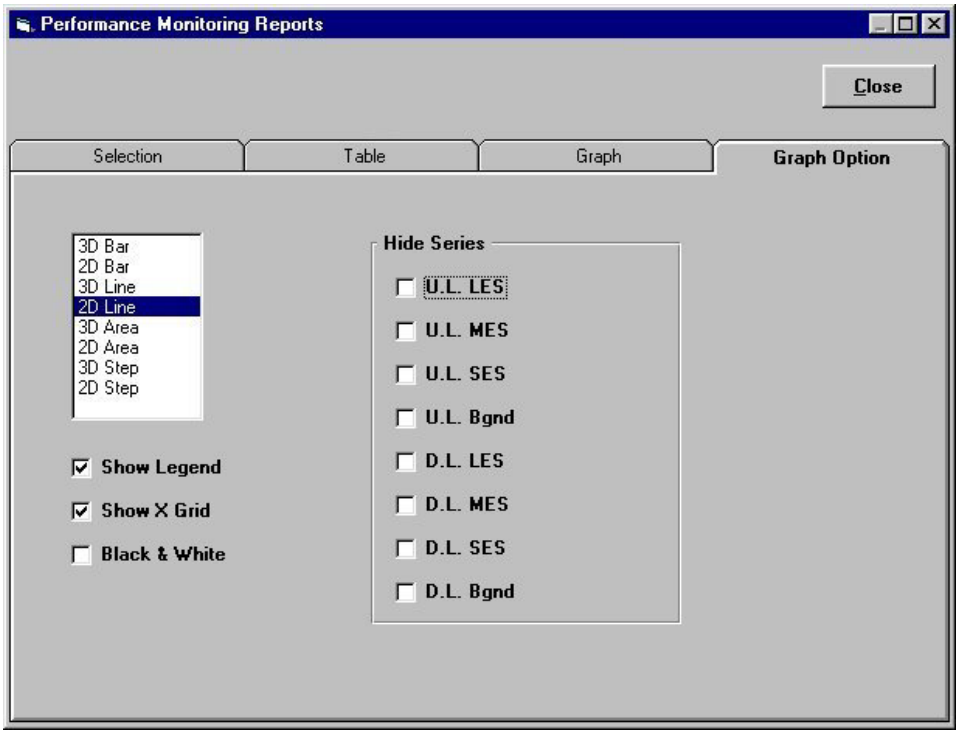


Figure 5-102: Performance/Traffic Monitoring Reports – Graphic Option Mode

This mode allows the user to customize the Graph display in terms of:

1. Graph Type

   3D Bar, 2D Bar, 3Dline, etc. Highlight the desired graph type and return to the Graph mode to view the resulting graph.

2. Enable/Disable Features

   Show Legend, Show X Grid, Black & White. Check the corresponding checkbox the enable the desired feature. Check again to disable a given feature.

   Selection of the Black & White feature (where B/W printers are in use) will refresh the Legend, assigning the parameters unique line representation, e.g., continuous, dotted, dashed, etc.

3. Disable Parameter Display

   The “Hide Series” frame contains all the reported parameters for the given Report name. Check a parameter checkbox to hide the particular parameter in the respective Graph display.

Management

Get RPCU History

Click the **Performance>Management>Get RPCU History** menu item to signal the system to send to the CMAP 8000 current performance data. Existing data will be removed.

Clear RPCU History

Click the **Performance>Management>Clear RPCU History** menu item to message the NMI card to clear all current PM data. When you click this item you will be prompted by the CMAP confirmatory message:

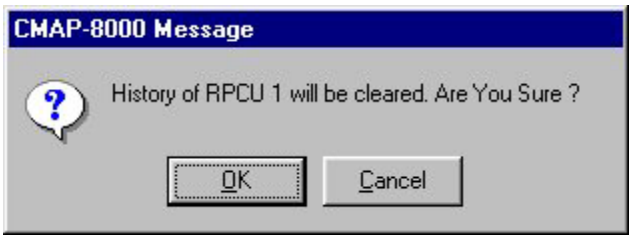


Figure 5-103: CMAP-8000 (Confirmatory) Message

Click the OK or Cancel buttons accordingly.

Housekeeping

Delete Performance Monitoring Data

This item enables the user to eliminate obsolete lists from the database, thus saving valuable disk space.

Click the **Performance>Management>Housekeeping>Delete Data** menu item to display the Delete Performance Monitoring Data interactive window:

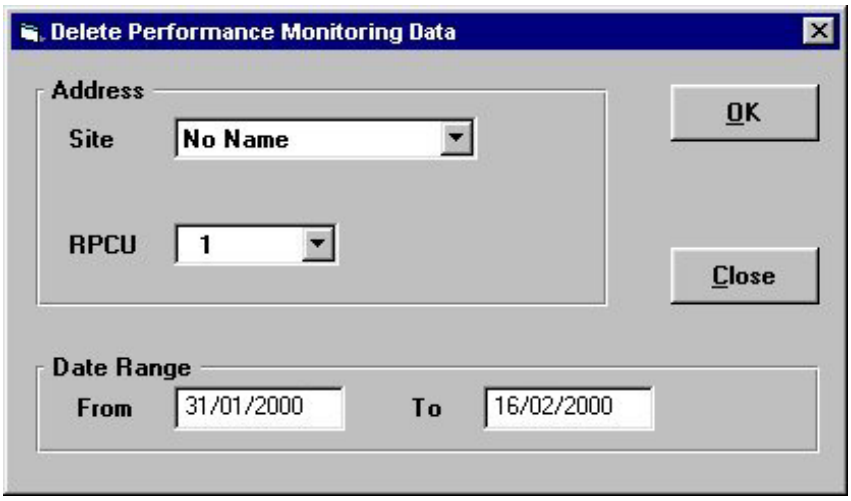


Figure 5-104: Delete Performance Monitoring Data Window

Enter the information required in the Address and Data Range sections of the interactive window and click the Ok button to obtain the CMAP confirmatory message:

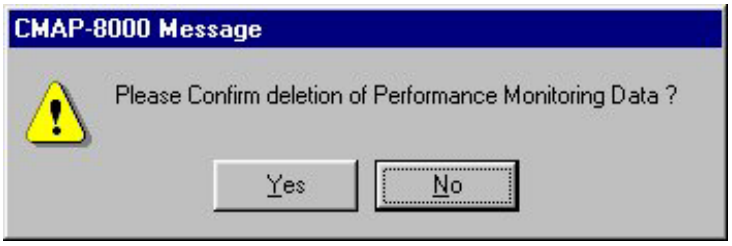


Figure 5-105: CMAP-8000 (Confirmatory) Message

Click the Yes button to confirm deletion of defined performance monitoring data.

Export Performance Monitoring Data

This item enables transfer of accumulated Performance Monitoring data to other systems or to data processing tools.

NOTE

Before invoking this item, ensure that the Printers option in the Windows Control Panel is correctly configured.

Click the **Performance>Management>Housekeeping>Export Data** menu item to display the Export Performance Monitoring Data interactive window:

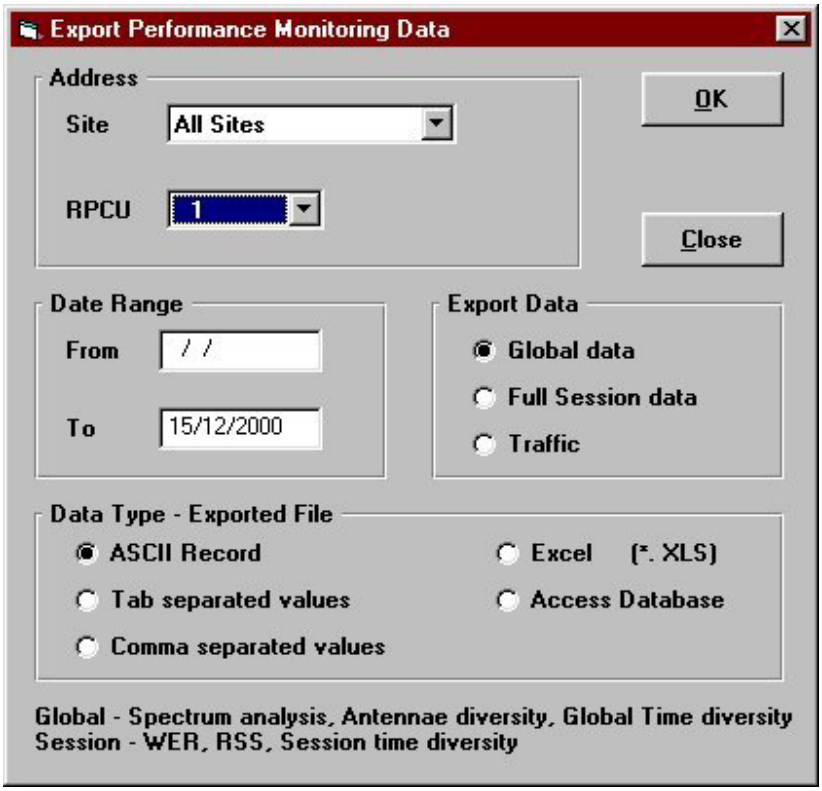


Figure 5-106: Export Performance Monitoring Data Window

In order to export PM data, enter the information required in the respective locations:

- Site: No Name (CMAP 8000) or All Sites (SuperOfficeMap).
- RPCU: Number.
- Date Range: According to Windows format.
- Export Data: Check the Global, Full Session data or Traffic radio button, as required.
- Data Type – Exported File: Check the radio button for the preferred file type.

Click the OK button to display the Enter The Report File Name interactive window:

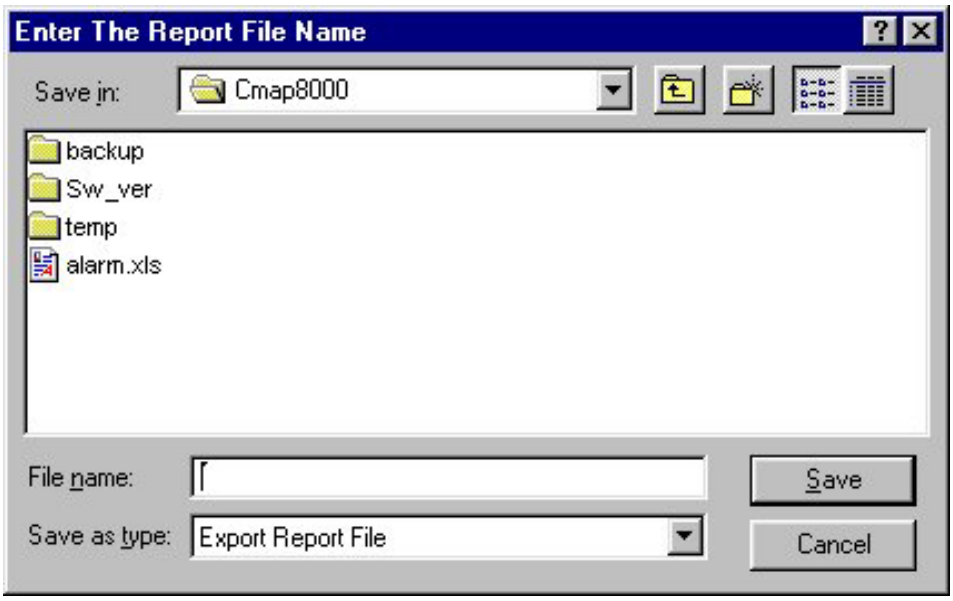


Figure 5-107: Enter The Report File Name Window

Select the folder where you wish to save the file and enter a name in the File name box.

Click the Save button to complete the data export procedure.

Security

See Chapter 11.

Options

See Chapter 12.

Help

See Chapter 13.

6

Chapter 6 - RPCU Shelf

In This Chapter

- Shelf and Card Arrangement, page 6-2
- Card Status, page 6-3
- Shelf Menu, page 6-5

Shelf and Card Arrangement

Double-click on the RPCU element in the main map to display the RPCU shelf configuration:

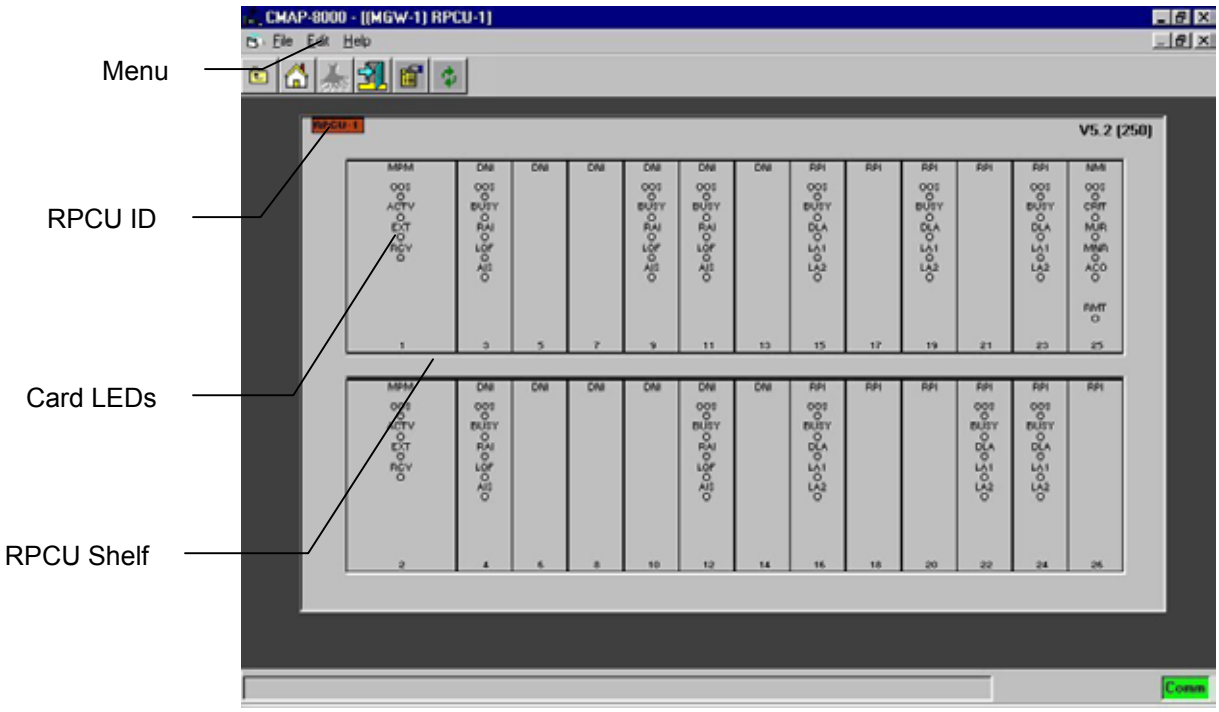


Figure 6-1: RPCU Shelf Display

The cards are arranged in their respective slots numbered 1 to 26.

Slots 1 and 2, are allocated for the MPM card and its corresponding redundant future option. The MPM card slot width is twice that of the remaining slots.

Slot 25 is allocated for the NMI card.

Slots 3 to 7 are reserved for DNI cards.

Slots 8 to 14 are reserved for DNI or RPI cards.

Slots 15 to 24 and Slot 26 are reserved for RPI cards.

The RPCU ID box is displayed in the top left hand corner of the shelf display (see Figure 6-1). The background indicates the current summarized alarm status (see below).

Card Status

Card LED's, according to card type, are defined below:

Table 6-1: LED Card Types

Card Type	LED	Color	Status
MPM	OOS	Red	Out Of Service
	ACTV	Green	In working order and currently Active (the redundant future optional card remains inactive)
	EXT	Red	Malfunction in External clock source
	RCV	Red	Malfunction in E1 clock synchronization (Receive)
DNI	OOS	Red	Out Of Service
	BUSY	Green	In working order and active
	RAI	Red	Remote Alarm Indicator
	LOF	Red	Loss Of Frame
	AIS	Yellow	Remote fault warning
RPI	OOS	Red	Out Of Service
	BUSY	Green	In working order and active
	DLA	Red	Digital Line Alarm indicates RPI to RPU/RPC protocol problems
	LA1	Red	Line alarm problems with DSL-A
	LA2	Red	Line alarm problems with DSL-B
NMI*	OOS	Red	Out Of Service
	CRIT	Red	Summarized Critical alarm
	MAJ	Red	Summarized Major alarm
	MNR	Yellow	Summarized Minor alarm

Table 6-1: LED Card Types

Card Type	LED	Color	Status
	ACO	Green	Alarm Cut Off. By pressing the ACO button (if alarms are lit up. If no alarms are lit up, the ACO will not respond), The ACO disconnects with alarm clearance or the onset of new alarms

* All NMI LED's, except for the OOS LED, indicate overall shelf status.

When a new DNI or RPI card is created in an empty slot, all LED's will display blue, as no card exists in the physical (actual) RPCU shelf. When a card is inserted in the respective shelf, the LED's will respond accordingly. Thus, the shelf is configured in preparation for actual card installation.

Double-click on any card to display current card status, as for example:

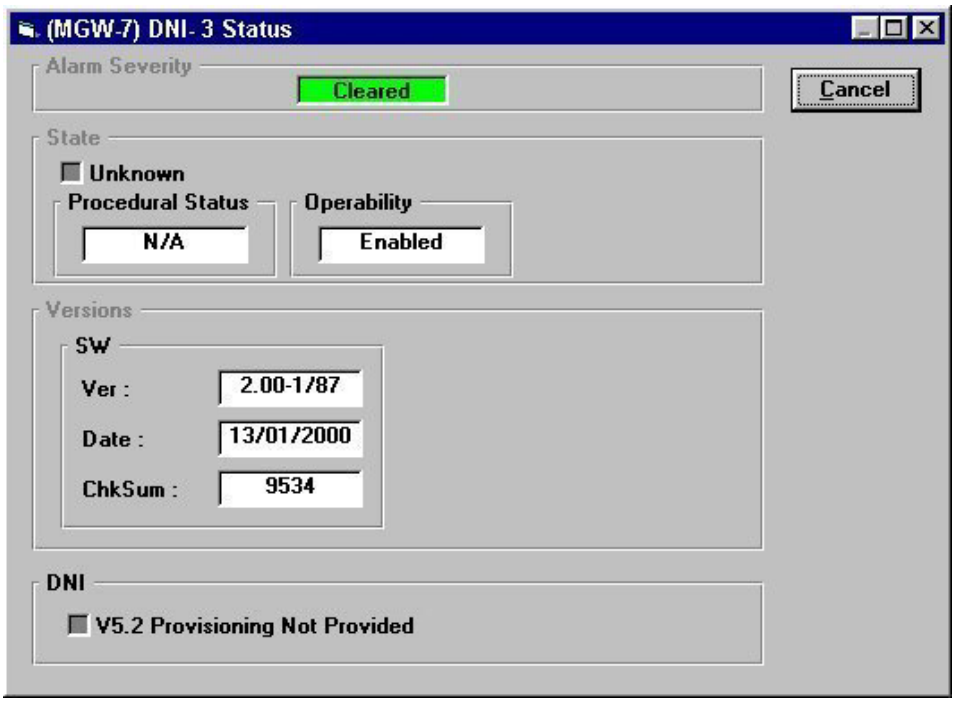


Figure 6-2: DNI-9 Card Status

NOTE

Regarding DNI status, if the particular DNI card is a V5.2 type, a DNI pane appears at the bottom of the Card Status window, containing the statement: "V5.2 Provisioning Not Provided," and checkbox (see Figure 6-2 above).

Shelf Menu

MPM Card

Highlight (click) the MPM card slot (see Figure 6-1) to display the relevant menu, including items: File, Edit, Configuration and Help.

File

Click the "File" item in the Menu bar to open the drop down menu, comprising the "Exit" item:

Figure 6-3: File Item in the Main Menu

Click the "Exit" item to display the following pop-up message:

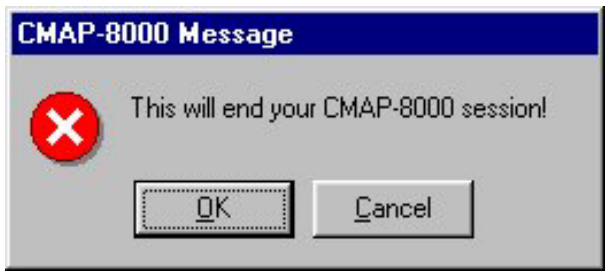


Figure 6-4: CMAP-8000 Pop-up Window

Press "OK" to quit CraftMap.

Press "Cancel" to return to CraftMap.

NOTE

You can also exit CraftMap by clicking the Exit button in the button bar immediately below the main menu.

Edit

Click the Edit to open the item in the main menu bar to open the drop down menu:

Figure 6-5: Edit Item in the Main Menu

The single “Lock window” item is highlighted. The “√“ in front of the item (the main map default) indicates that the active window is locked.

Click on the Lock window item to unlock an active window. The “√“ will not appear in front of the item.

NOTE

All sub-maps are unlocked in their default mode.

Configuration

Click on the Configuration item in the main menu to display the Provisioning > Enable MPM Redundancy menu item:

Figure 6-6: Configuration Item in the Main Menu

Click the Enable MPM Redundancy item to display the CMAP 8000 message:

Figure 6-7: CMAP-8000 Message

If you have a second MPM board in the RPCU, click the OK button to continue.

NOTE

A “✓” will appear to the right of the Enable MPM Redundancy item.

After having enabled MPM redundancy, the next time the MPM is selected (highlighted), the Maintenance item will appear in the main menu (see below).

Maintenance

Click on the Maintenance item in the main menu to display the Maintenance>sWap to redundant mpm menu item:

Figure 6-8: Maintenance Item in the Main Menu

Click the sWap to redundant mpm menu item to display the MPM Redundant dialog window:

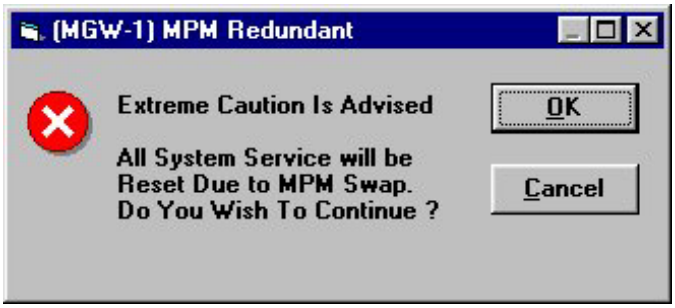


Figure 6-9: MPM Redundant Dialog Window

If OK, the swapping process will take from 2 to 3 minutes to complete.

Cancel to return to the shelf map.

Double-click on the redundant MPM card to display the respective Status window. The MPM pane displays “Database is not consistent” with checkbox:

Figure 6-10: MPM Status Window

Help

Click the Help/About item in the main menu to display summary information about CMAP8000 and the Network Management Interface:

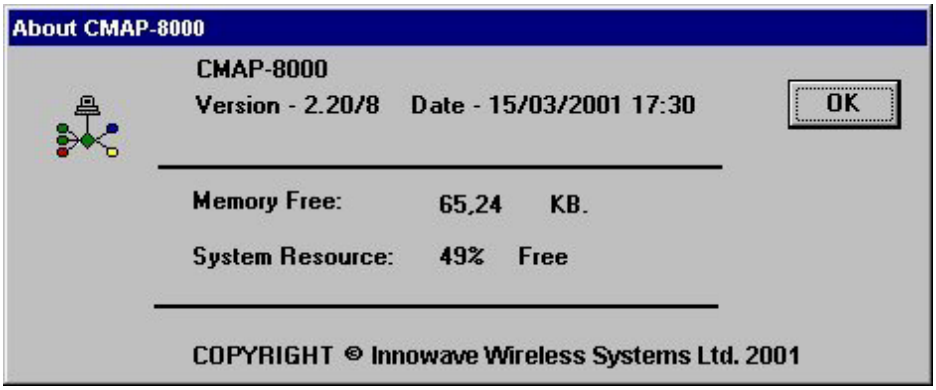


Figure 6-11: About CraftMap Pop-up Window

If the system resources fall below a threshold of 30%, the available system resources are at a critical level and the user is strongly advised to unload unnecessary programs from the system, thereby recovering system resources.

DNI Card (Empty Slot)

Highlight (click) an empty DNI card slot (see Figure 6-1) to display the relevant menu, including items: File, Edit, Configuration and Help.

The File, Edit and Help menus are as described above under heading *MPM Card*.

Configuration

NOTE

The Configuration menu item is disabled until a slot is highlighted.

To install a card in an empty slot:

1. Click the Configuration menu item, to display the sub menu.
2. Click the Install item to display the card install option:

Figure 6-12: Install Item Under Configuration

NOTE

CMAP-8000 automatically displays the relevant card corresponding to the slot selection.

3. Click the displayed card item to display the CMAP-8000 Accepted message:

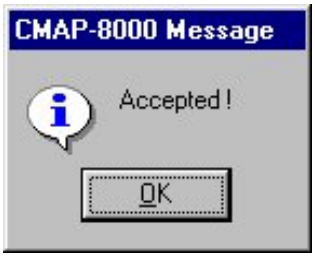


Figure 6-13: CMAP 8000 (Accepted) Message

4. Press "OK" to display the card in the desired slot.

DNI Card (Installed)

Highlight (click) a DNI card slot (see Figure 6-1) to display the relevant menu, including items: File, Edit, Configuration, Maintenance and Help.

The File, Edit and Help menus are as described above under heading *MPM Card*.

Configuration

To delete an installed card:

1. Click the Configuration item in the menu to display the sub menu.
2. Click the Provisioning item to display the Delete item:

Figure 6-14: Provisioning Item

Click the Delete menu item to display the following warning message:

CMAP-8000 Message
Warning !. Deleting the Board disables any further Alarms and events from it.
Do you want to Continue ?
Yes
No

Figure 6-15: CMAP-8000 Message

3. Click the "Yes" button to complete the card deletion.

To unlock a card after a new SW version has been loaded::

1. Click the Configuration menu item to display the sub menu.
2. Click the Provisioning item to display the Unlock board item.
3. Click the Unlock board item to display the CMAP 8000 message:

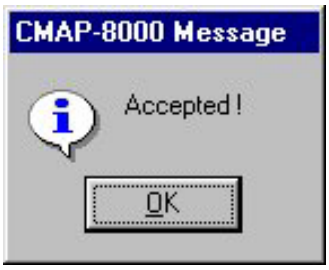


Figure 6-16: CMAP-8000 (Accepted) Message

4. Press OK to enable card normal operation.

Maintenance

To download SW for RPI and DNI cards:

1. Click the Maintenance item in the menu to display the sub menu:

Figure 6-17: Maintenace Item in the Main Menu

2. Click the Download SW item to display the following cautionary message:

Figure 6-18: CMAP 8000 (Cautionary) Message

3. Click OK to proceed and display the CMAP Accepted message:

Figure 6-19: CMAP 8000 (Accepted) Message

4. Press OK to complete SW download.

Continue to load software to all the RPI and DNI cards accordingly.

NOTE

Loading of new SW version to the DNI/RPI cards is carried out only after the version has been successfully loaded to the NMI card (see *NMI Card*)

Once the software has been loaded, the card is in Lock status. Unlock the card by clicking the Configuration>Provisioning>Unlock board item. The card remains out of service until Unlock has been effected.

To view SW download status for a given card:

1. Click the Maintenance>SW download status menu item to display the Current SW Download Status window:

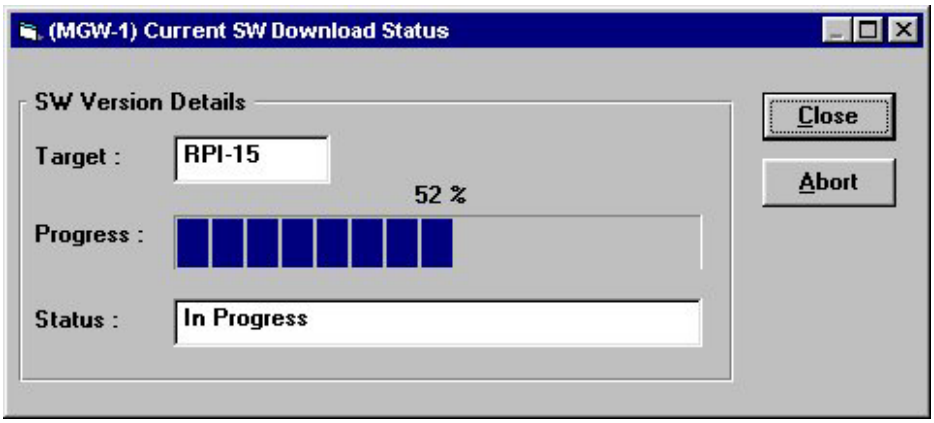


Figure 6-20: Current SW Download Status (In Progress) Window

The SW Version Details frame shows the Target ID, Progress bar and Status field.

The user can abort the process by pressing the Abort button.

When the SW has downloaded, the Status field will display: “Finished.”

RPI Card (Empty Slot)

Highlight (click) an empty RPI card slot (see Figure 6-1) to display the relevant menu, including items: File, Edit, Configuration and Help.

The File, Edit and Help menus are as described above under heading *MPM Card*.

Configuration is as described under heading *DNI Card (Empty Slot)*.

RPI Card (Installed)

Highlight (click) an RPI card slot (see Figure 6-1) to display the relevant menu, including items: File, Edit, Configuration, Maintenance and Help.

The File, Edit and Help menus are as described above under heading *MPM Card*.

Configuration and Maintenance are as described under heading *DNI Card (Installed)*.

NMI Card

Highlight the NMI card (see Figure 6-1) to display the relevant menu, including items File, Edit, Maintenance and Help.

The File, Edit and Help menus are as described above under heading *MPM Card*.

Maintenance

Click the Maintenance menu item to open the menu:

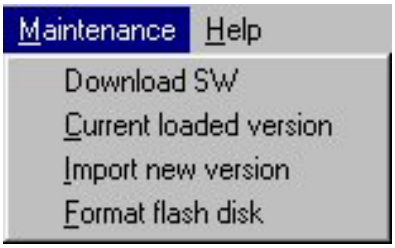


Figure 6-21: Maintenance Item in the Main Menu

Click Maintenance>Import new version to display the Import SW Versions window:

Figure 6-22: Import SW Versions Window

The window contains two enabled buttons: Close and Open File and one disabled button: Import.

Press the Open File button to display the Import SW Version Files window:

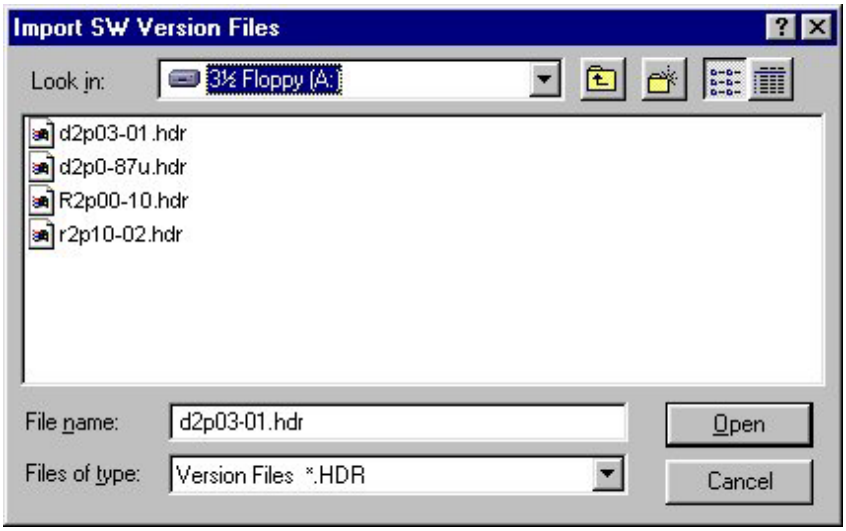


Figure 6-23: Import SW Version Files Window

NOTE

*.HDR files are supplied in diskette form.

Insert the diskette in the appropriate floppy disk drive and select the drive from the Drives drop-down list box.

Highlight selected file and press Open to display SW version details:

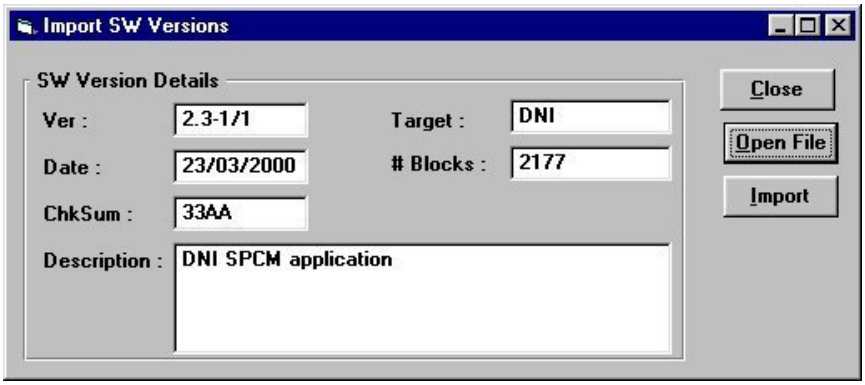


Figure 6-24: Import SW Versions Window (with SW version details)

Press the Import button (now enabled) to write the file to the hard disk.

Repeat the above for all files supplied on the floppy diskette in order to import the required software versions.

To download the software to the NMI card, click the Download SW item to display the SW Version Information window:

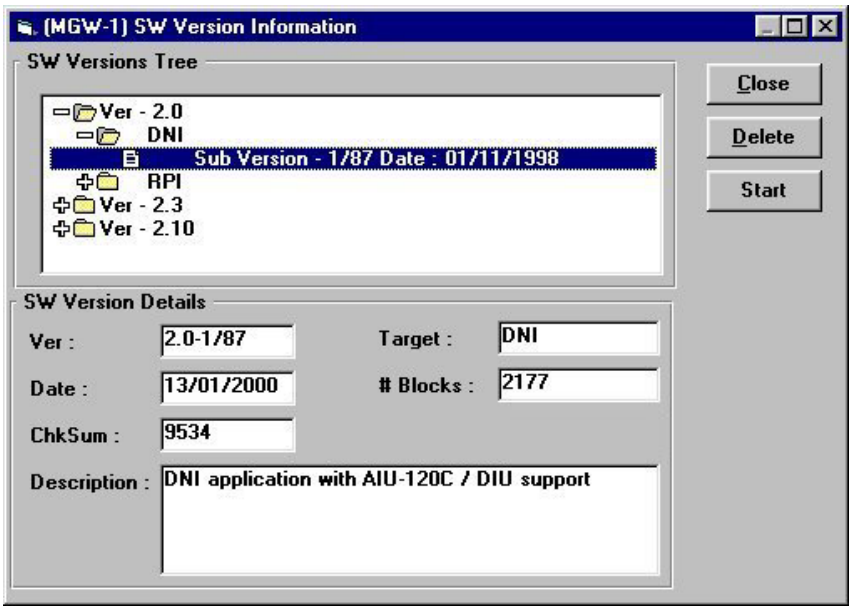


Figure 6-25: SW Version Information Window

Select an available SW version by expanding the SW Version Tree.

Click the "+" and "-" signs on the left hand side of the folder icons to expand and contract the tree respectively.

Highlight the required version (see example: Sub Version - 1/87 Date: 11/01/1998) and click the Start button to initiate downloading of the corresponding software.

To delete a software version, highlight the specific version and press the Delete button.

NOTE

SW Version details are displayed in the bottom part of the window.

When the Start button is clicked, software downloading is initiated. While downloading is in progress, the SW Download Status screen is displayed:

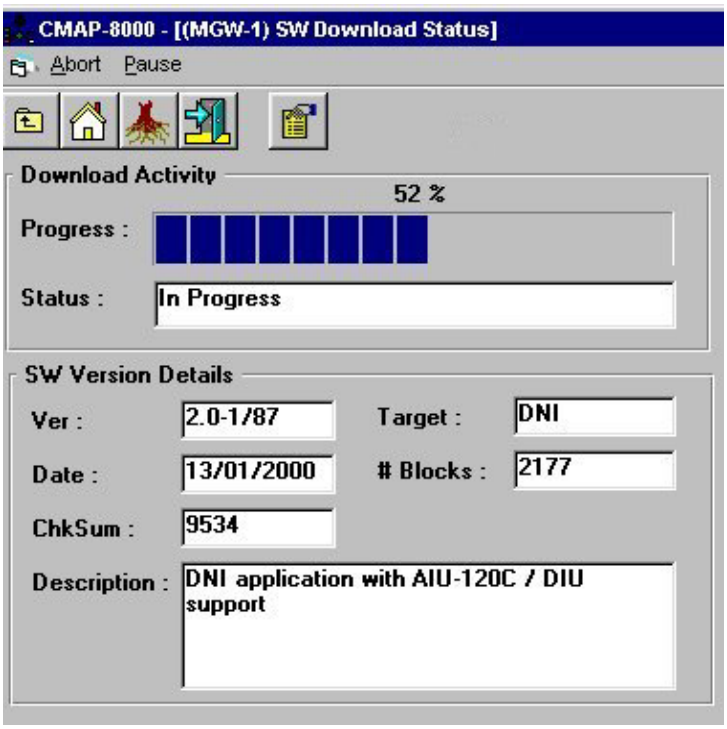


Figure 6-26: Section of CMAP (SW Download Status) Screen

Click the Abort button in the menu to intervene and terminate the SW downloading session.

Click the Pause button in the menu to check SW downloading and display:

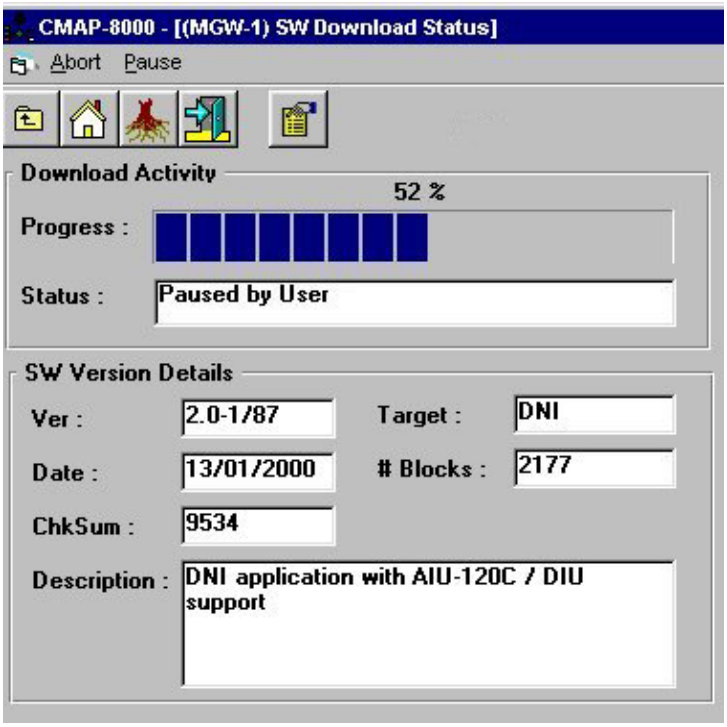


Figure 6-27: Section of CMAP (SW Download Status) Screen

Click the Resume button in the menu to continue software version downloading

Click Maintenance>Current loaded version to display the current SW Version information window:

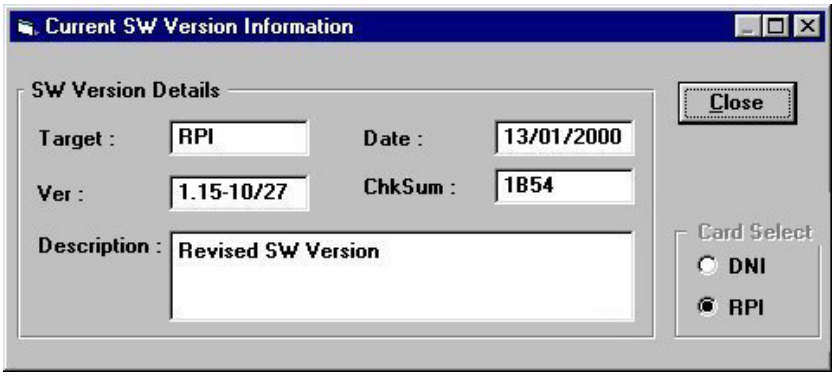


Figure 6-28: Current SW version Information Window

The DNI and RPI SW files are downloaded to the NMI card. Either of these two files can be downloaded to the relevant card (DNI/RPI), by checking the relevant radio button in he “Card Select” pane.

Press the Close button to return to the main screen.

To clear all accumulated data on the NMI card, click the Maintenance>Format flash disk menu item to display the CMAP 8000 message:

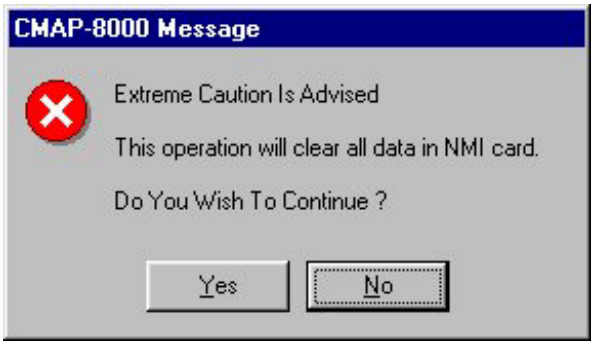


Figure 6-29: CMAP 8000 Message (Caution)

Yes to clear all data, including performance-monitoring data for the previous 8 hours and DNI and RPI pre-loading files, in NMI card and return to the shelf map.

7

Chapter 7 - E1 Map

In This Chapter

- General, page 7-2
- V5.2 Provisioning, page 7-3
- E1 Alarm Status, page 7-6
- Upgrading an Existing V5.2 Single E1-based MGW System, page 7-7

General

Double-click an E1 object in the Main Map to display the E1 sub map:

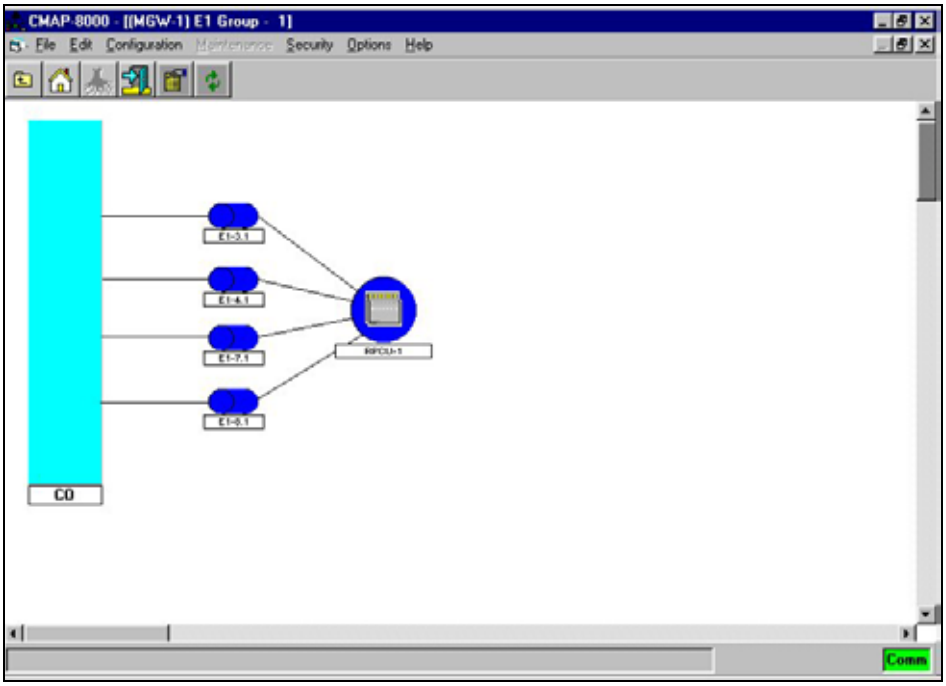


Figure 7-1: CMAP-8000 E1 Group Sub Map

The E1 elements associated with the selected E1 group in the Main Map are displayed with the appropriate menu bar. The menu is a subset of the main map menu.

Focusing on different objects in the RPU/RPC sub map display the corresponding menus:

Table 7-1: RPU/RPC Sub Map Menus

Object in Focus	Deviations from Main Map Menu
RPCU	None
E1	Maintenance item disabled Configuration>Provisioning>Subscriber allocation Configuration>Provisioning>V5.2

V5.2 Provisioning

Single E1 Interface

In the case of an RPCU defined to work with V5.2 (250) E1 interface proceed as follows:

Highlight an E1 object and click the Configuration>Provisioning>V5.2 item in the menu bar to display the E1 V5.2 Provisioning pop-up window:

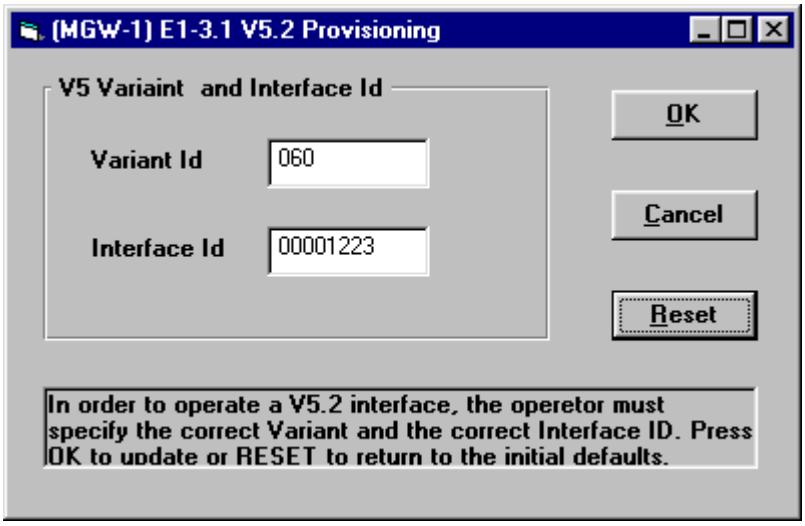

(MGW-1) E1-3.1 V5.2 Provisioning
V5 Variaint and Interface Id
Variant Id
060
Interface Id
00001223
OK
Cancel
Reset
In order to operate a V5.2 interface, the operetor must specify the correct Variant and the correct Interface ID. Press OK to update or RESET to return to the initial defaults.

Figure 7-2: E1 V5.2 Provisioning Pop-up Window

To activate a V5.2 interface, enter the appropriate Variant ID and Interface ID in the respective boxes and click the OK button to display the CMAP 8000 Accepted! Message. Click OK to update and return to the E1 sub map.

Multi E1 Interface

In the case of an RPCU defined to work with V5.2M (1024) E1 interface proceed as follows:

Highlight an RPCU object in the main map and click the Configuration>Provisioning>Multi V5.2 item in the menu bar to display the E1 V5.2 Provisioning pop-up window:

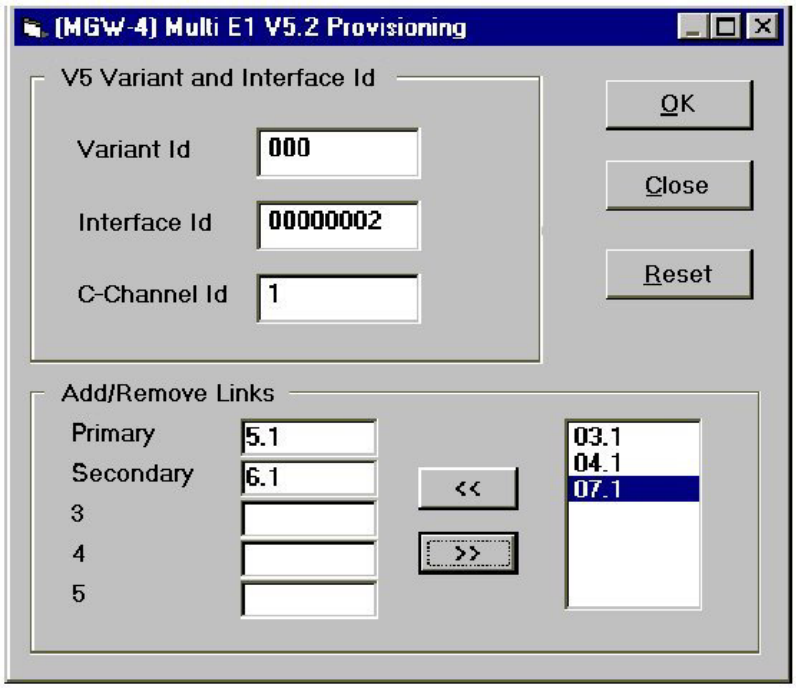


Figure 7-3: Multi E1 V5.2 Provisioning Pop-up Window

To activate a multi V5.2 interface, enter the appropriate Variant ID, Interface ID and C-Channel ID in the respective boxes, where:

Variant ID is a valid number in the 0 to 127 range, common to the whole E1 bundle, coordinated with the C.O. administrator.

Interface ID is a valid number common to the whole E1 bundle, coordinated with the CO administrator.

C-Channel ID is the logical C-Channel ID of the CONTROL, LINK, BCC, PSTN and ISDN C-Paths, all of which should be bundled to a single C-Channel. C-Channel logical ID can be provisioned to any valid number and coordinated with the C.O. Logical C-Channel.

Proceed to the Add/Remove Links frame (see Figure 7-3) to provision the Primary, Secondary and Regular E1 links, as follows:

Select the relevant DNI card indication from the right-hand box (03.1, 04.1, etc.), and move it to the appropriate link position (left-hand fields), using the << button.

In the display window, DNI's 5.1 and 6.1 are currently defined as part of the multi E1 bundle, while DNI's 3.1, 4.1 and 7.1 need to be defined.

NOTE

The number of DNI's displayed is as actually configured in the RPCU, regardless of the number of E1's defined for the Multi E1V52 bundle.

Click the OK button to display the CMAP 8000 Accepted! Message.

Click OK to update and return to the E1 sub map.

E1 Alarm Status

Double-click an E1 object in the sub map to display the E1 alarm status pop-up window:

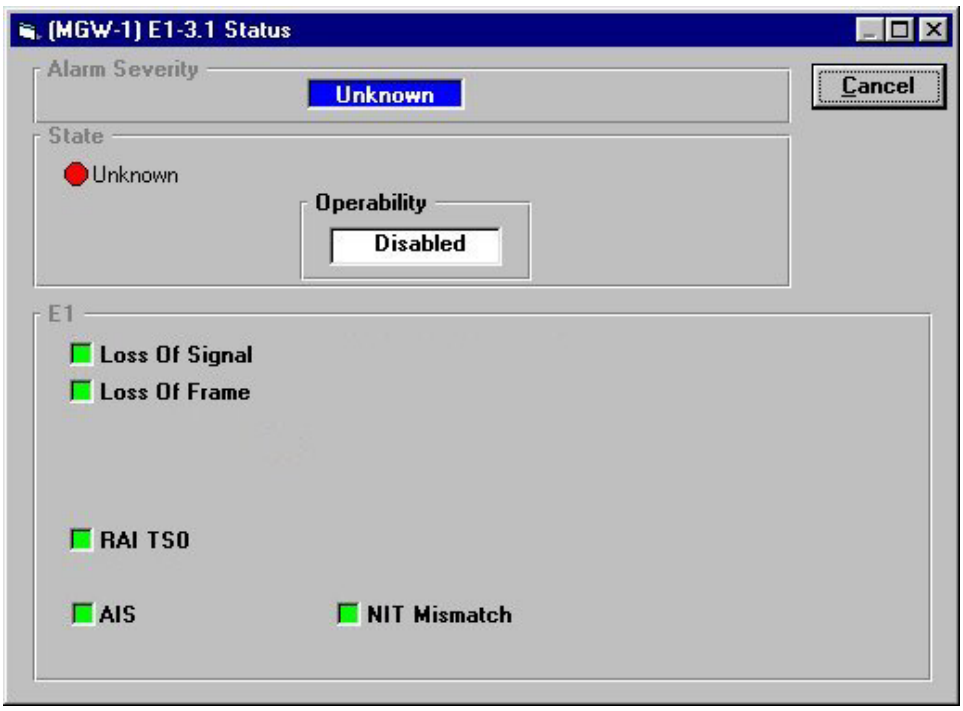


Figure 7-4: E1 Status Pop-up Window

The "Alarm Severity" frame severity level, according to the categories defined in "Chapter 10- Alarm Log," is displayed in the appropriate box.

The "State" frame indicates the status of the E1.

A red-round "Unknown" box indicates status no longer determined. The "Operability" box displays "Enabled" or "Disabled."

The E1 frame lists the E1 alarm types, where a red-round box indicates alarm occurrence.

To display Multi E1 alarms, double-click the "Multi E1" label of the RPCU icon in the main map (see *RPCU Card And Interface Setup*)

Upgrading an Existing V5.2 Single E1-based MGW System

Apply the CMAP8000 Convert utility (see Appendix H) to upgrade an existing V5.2 single E1-based MGW system to a multi E1 based MGW system. The conversion procedure entails re-mapping of the connection assignments of C.O. subscribers from the different E1's of the V5.2 single mode to the bundle of E1's in the multi E1 mode.

NOTE

The DNI card software should be upgraded to support V5.2 Multi E1.

8

Chapter 8 - RPU/RPC Map

In This Chapter

- General, page 8-2
- MDSL Alarm Status, page 8-4
- RPU/RPC Alarm Status, page 8-6
- RPU/RPC Inventory and Version Information, page 8-7
- RPU/RPC Statistics, page 8-8

General

Double click on an RPU/RPC object in the Main Map to display the object's sub map:

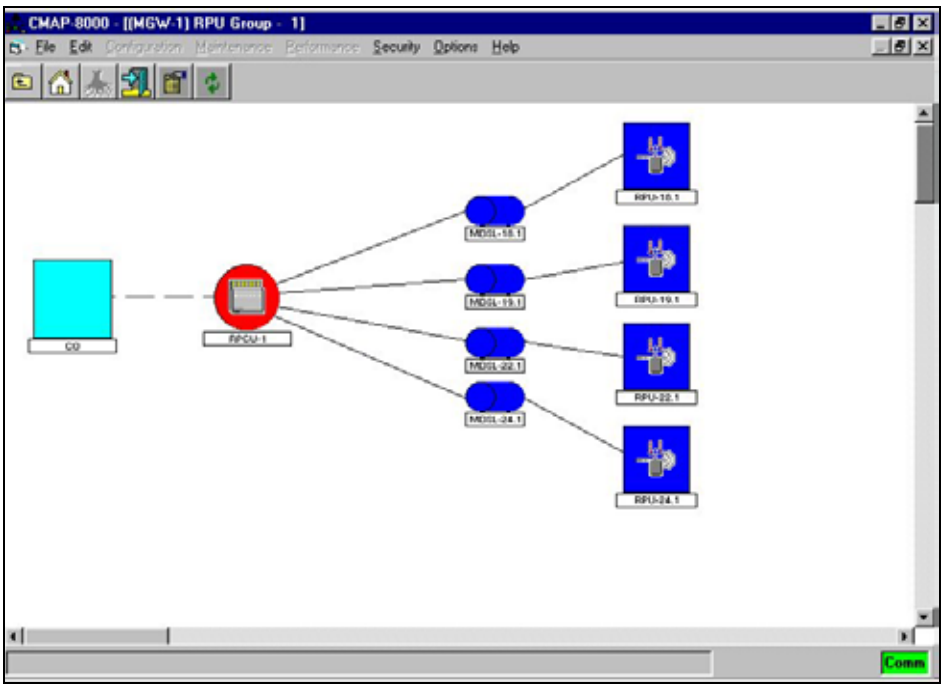


Figure 8-1: CMAP-8000 - RPU/RPC Sub Map

The RPU/RPC's and MDSL's associated with the selected RPU/RPC group in the Main Map are displayed with the appropriate menu bar. The menu is a subset of the main map menu.

NOTE

If the letters "RS" replaces the RPCU object, this denotes that a Remote Session is in progress. This means that no other XMAP station can open a Remote Session on the particular RPCU.

Focusing on different objects in the RPU/RPC sub map display the corresponding menus:

Table 8-1: RPU/RPC Sub Map Menus

Object in Focus	Deviations from Main Map Menu
RPCU	None
MDSL	Maintenance item disabled Configuration>Provisioning>MDSL details (*MDSL Details*)
RPU/RPC	Maintenance item disabled Configuration>Version Information Configuration>Provisioning>RPU/RPC details (*RPU/RPC details*) Performance>Statistics

MDSL Alarm Status

Double-click the MDSL object to display the alarm status pop-up window:

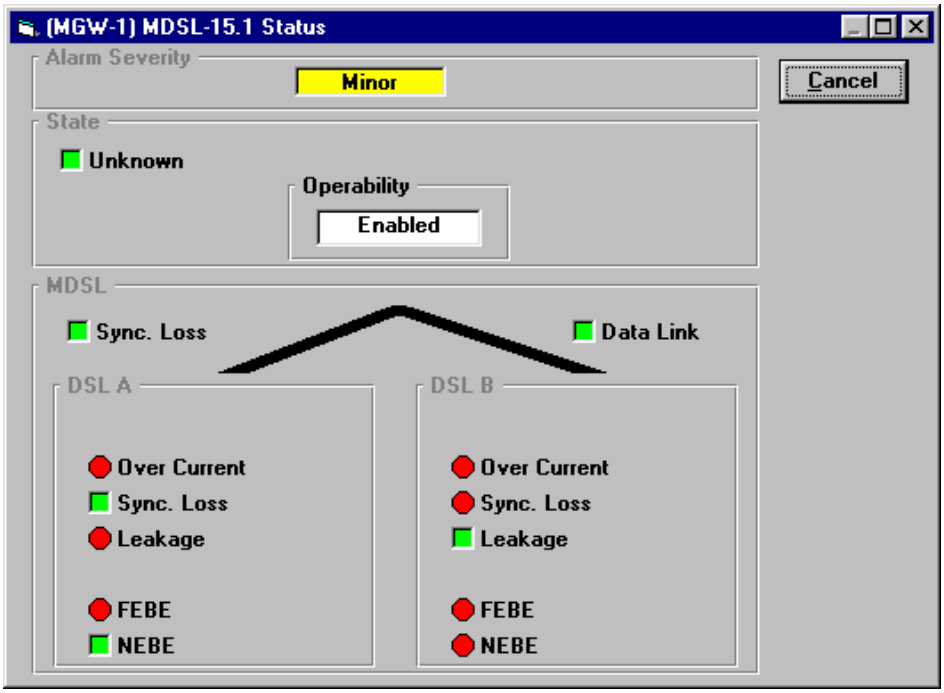


Figure 8-2: MDSL Status Pop-up Window

NOTE

The MDSL status display is for information purposes only.

In Figure 8-2, the "Alarm Severity" frame severity level, according to the categories defined in "Chapter 10 - Alarm Log," is displayed in the appropriate box.

The "State" frame indicates the status of the MDSL.

A round-red "Unknown" box indicates status no longer determined.

The "Operability" box displays "Enabled" or "Disabled."

The MDSL frame indicates the overall alarm status (DSL A and DSL B), where a round-red box indicates active alarm status.

The DSL A and DSL B frames display the alarm status for the individual DSL's:

- Over Current
- Sync. Loss
- Leakages
- FEBE (Far End Bit Error) and
- NEBE (Near End Bit Error).

RPU/RPC Alarm Status

Double-click an RPU/RPC object to display the RPU/RPC alarm status pop-up window:

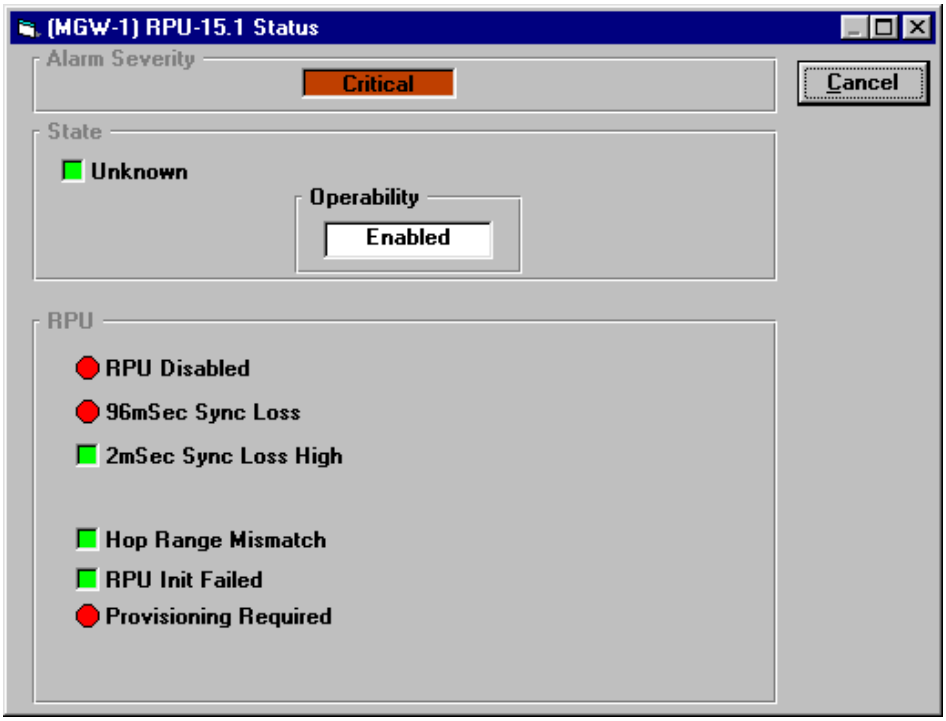


Figure 8-3: RPU/RPC Status Pop-up Window

NOTE

The RPU/RPC status display is for information purposes only.

The "Alarm Severity" frame severity level, according to the categories defined in section "Chapter 10 - Alarm Log," is displayed in the appropriate box.

The "State" frame indicates the status of the RPU/RPC.

A red-round "Unknown" box indicates status no longer determined. The "Operability" box displays "Enabled" or "Disabled."

The RPU/RPC frame lists the RPU/RPC alarm types, where the corresponding red-round box indicates active alarm status.

The RPU/RPC sub map is "Unlocked" by default, therefore the screen can be closed and the Main Map restored.

RPU/RPC Inventory and Version Information

Click an RPU/RPC object in the RPU/RPC sub map (Figure 8-1) and click the Configuration>Version Information menu item to display the RPU/RPC Inventory and Version Info popup window:

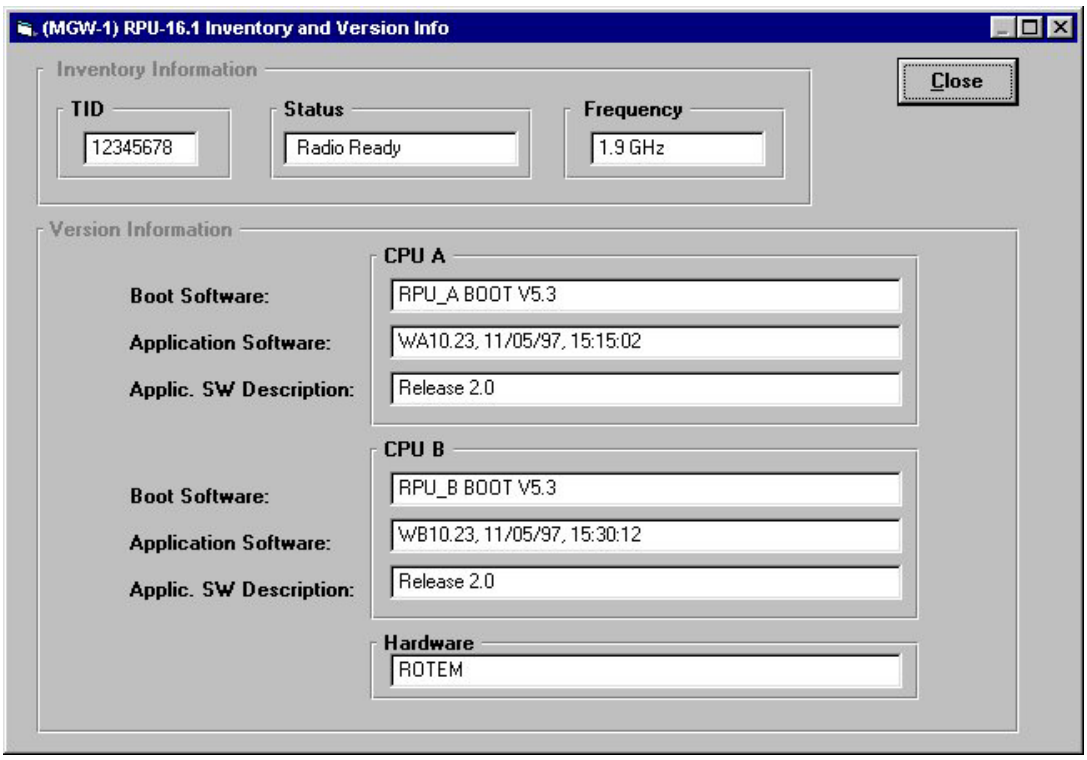


Figure 8-4: RPU/RPC Inventory and Version Info Popup Window

The popup window provides Inventory Information and Version Information for the respective RPU/RPC.

RPU/RPC Statistics

Click an RPU/RPC object in the RPU/RPC sub map (Figure 8-1) and click the Performance>Statistics menu item to display the RPU/RPC Statistics screen:

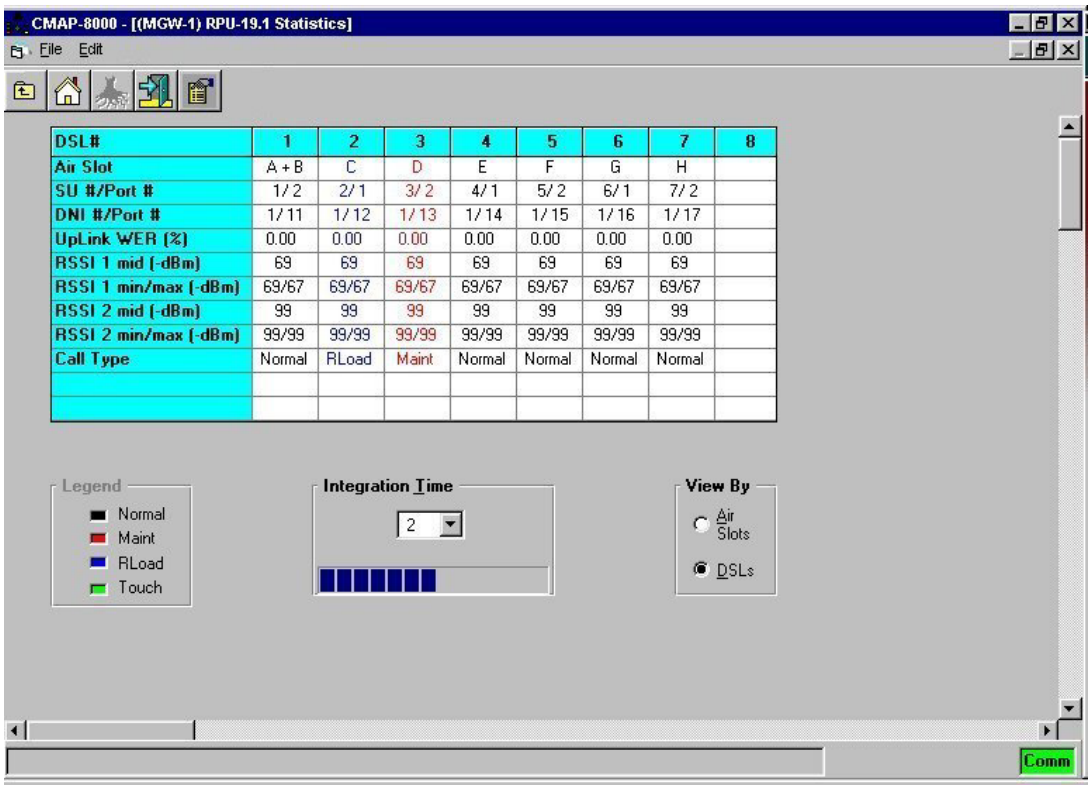

CMAP-8000 - [(MGW-1) RPU-19.1 Statistics]
File Edit
DSL# 1 2 3 4 5 6 7 8
Air Slot A+B C D E F G H
SU #/Port # 1/2 2/1 3/2 4/1 5/2 6/1 7/2
DNI #/Port # 1/11 1/12 1/13 1/14 1/15 1/16 1/17
UpLink WER (%) 0.00 0.00 0.00 0.00 0.00 0.00 0.00
RSSI 1 mid (-dBm) 69 69 69 69 69 69 69
RSSI 1 min/max (-dBm) 69/67 69/67 69/67 69/67 69/67 69/67 69/67
RSSI 2 mid (-dBm) 99 99 99 99 99 99 99
RSSI 2 min/max (-dBm) 99/99 99/99 99/99 99/99 99/99 99/99 99/99
Call Type Normal RLoad Maint Normal Normal Normal Normal
Legend
Normal
Maint
RLoad
Touch
Integration Time
2
View By
Air Slots
DSLs
Comm

Figure 8-5: RPU/RPC Statistics (View by DSLs)

The RPU/RPC statistics displayed above are sorted according to DSLs. The RPU/RPC statistics are alternatively sorted according to Air Slots. Air Slots/DSLs selection is made by checking the appropriate radio button in the "View By" frame.

Statistics are displayed for the following parameters:

Table 8-2: RPU/RPC Parameter Statistics

Parameter	Description
Ant 1/2 WER	WER of receiver to which ANT1/2 are connected respectively.
Ant 1/2 select ratio	Percentage time usage by each antenna.
DSL #	Digital Subscriber Line Number

Table 8-2: RPU/RPC Parameter Statistics

Parameter	Description
RSSI	Radio Signal Strength Indication (dBm)
SU #/Port #.	SU ID Number/Port No.
DNI #/Port #	Subscriber Number with respect to a given RPU/RPC
UpLink WER	WER "looking" from RPU/RPC
WER	Word Error Rate.

RPU/RPC statistics sorted according to Air Slots are shown below:

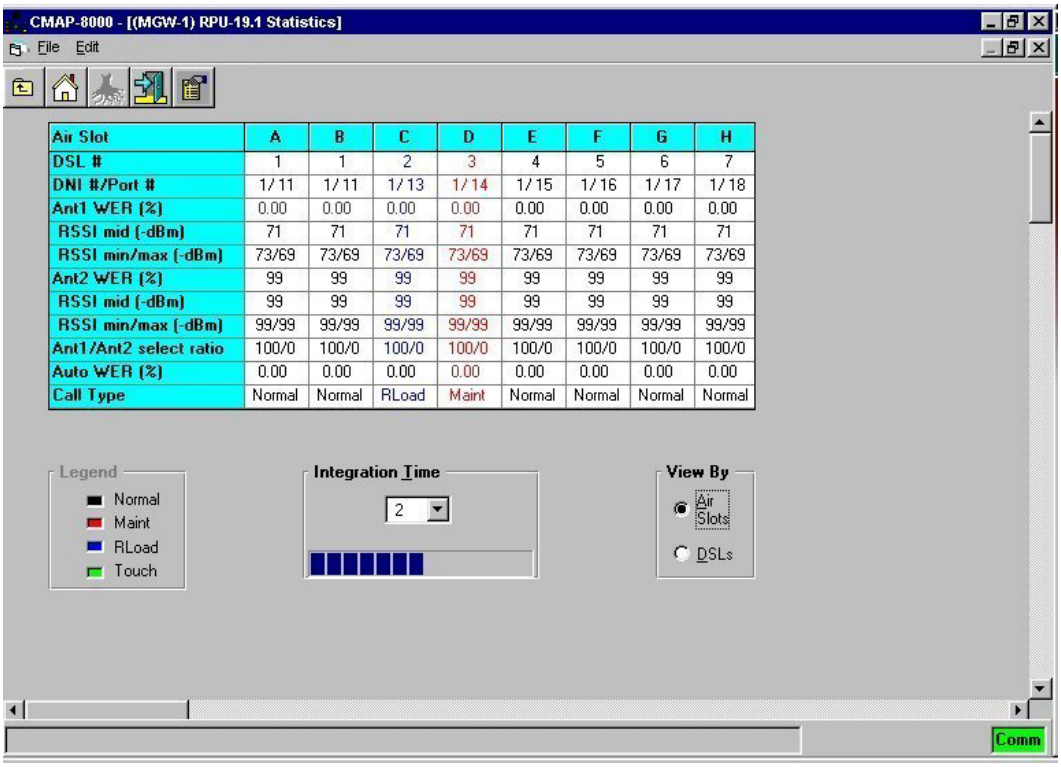

CMAP-8000 - [(MGW-1) RPU-19.1 Statistics]
File Edit
Air Slot A B C D E F G H
DSL # 1 1 2 3 4 5 6 7
DNI #/Port # 1/11 1/11 1/13 1/14 1/15 1/16 1/17 1/18
Ant1 WER (%) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
RSSI mid (-dBm) 71 71 71 71 71 71 71 71
RSSI min/max (-dBm) 73/69 73/69 73/69 73/69 73/69 73/69 73/69 73/69
Ant2 WER (%) 99 99 99 99 99 99 99 99
RSSI mid (-dBm) 99 99 99 99 99 99 99 99
RSSI min/max (-dBm) 99/99 99/99 99/99 99/99 99/99 99/99 99/99 99/99
Ant1/Ant2 select ratio 100/0 100/0 100/0 100/0 100/0 100/0 100/0 100/0
Auto WER (%) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Call Type Normal Normal RLoad Maint Normal Normal Normal Normal
Legend
Normal
Maint
RLoad
Touch
Integration Time
2
View By
Air Slots
DSLs
Comm

Figure 8-6: RPU/RPC Statistics (View by Air Slots)

Performance statistics ares controlled through the "Integration Time," the time duration for WER measurement. The Integration Time is selected from the drop down list box by clicking the arrow box to the right of the box and selecting the required integration time: 2, 5, 10, 15 or 20 second time intervals. Note that there are 500 "hops" per second.

9

Chapter 9 - SU Map

In This Chapter

- General, page 9-2
- Version Information, page 9-5
- Sub/SU Parameter Provisioning, page 9-6
- Maintenance, page 9-7
- Performance, page 9-9
- SU Status, page 9-11

General

Double-click the SU object in the Main Map to display the SU Group Selection window:

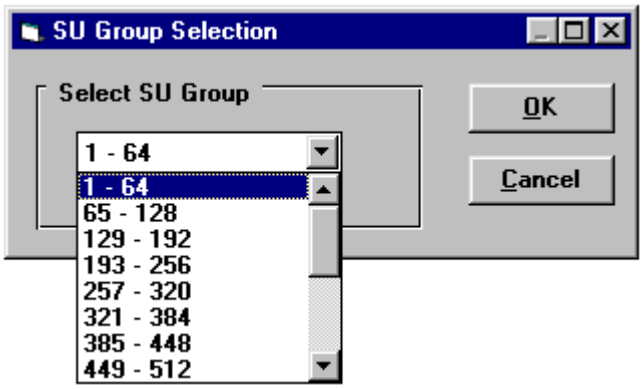


Figure 9-1: SU Group Selection Window

Highlight a selected group and press OK to display the SU unit array:

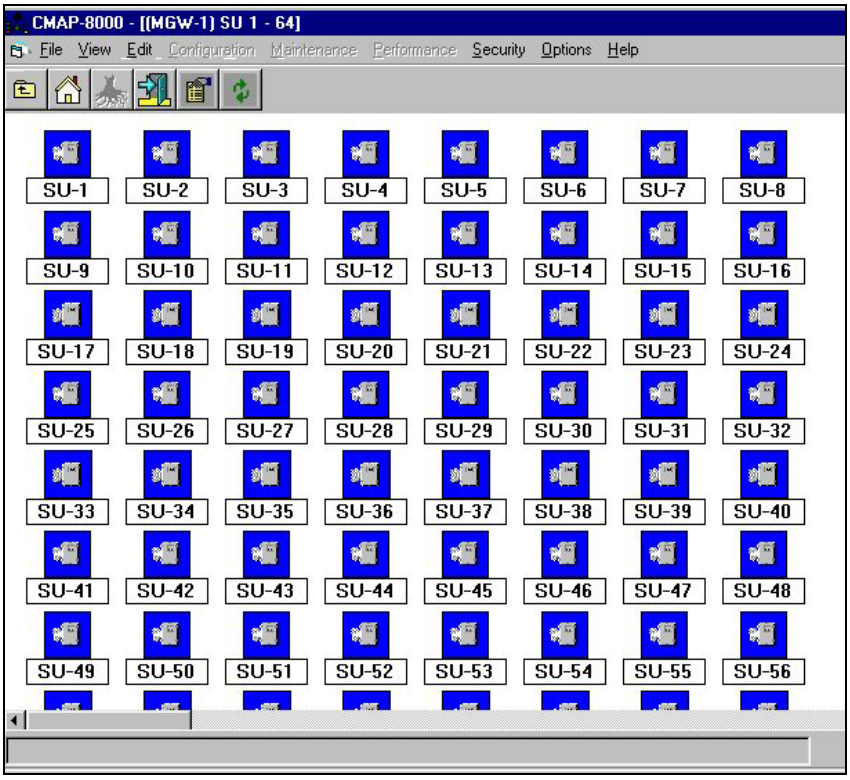

CMAP-8000 - [(MGW-1) SU 1 - 64]
File View Edit Configuration Maintenance Performance Security Options Help
SU-1 SU-2 SU-3 SU-4 SU-5 SU-6 SU-7 SU-8
SU-9 SU-10 SU-11 SU-12 SU-13 SU-14 SU-15 SU-16
SU-17 SU-18 SU-19 SU-20 SU-21 SU-22 SU-23 SU-24
SU-25 SU-26 SU-27 SU-28 SU-29 SU-30 SU-31 SU-32
SU-33 SU-34 SU-35 SU-36 SU-37 SU-38 SU-39 SU-40
SU-41 SU-42 SU-43 SU-44 SU-45 SU-46 SU-47 SU-48
SU-49 SU-50 SU-51 SU-52 SU-53 SU-54 SU-55 SU-56

Figure 9-2: Subscriber Unit Array Screen

Individual SU's are colored in accordance with their current alarm status.

Click the View item in the main menu to display the View menu:

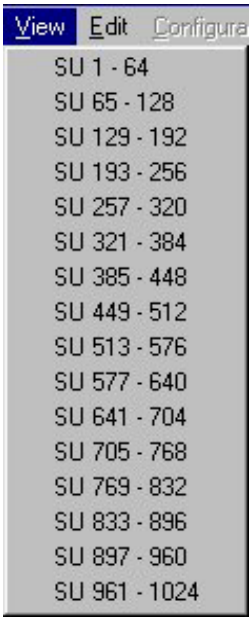


Figure 9-3: View Item in the Main Menu

Click the desired group of SU's to display the corresponding array.

For example, click the "SU 321 – 384" group to display the corresponding SU array:

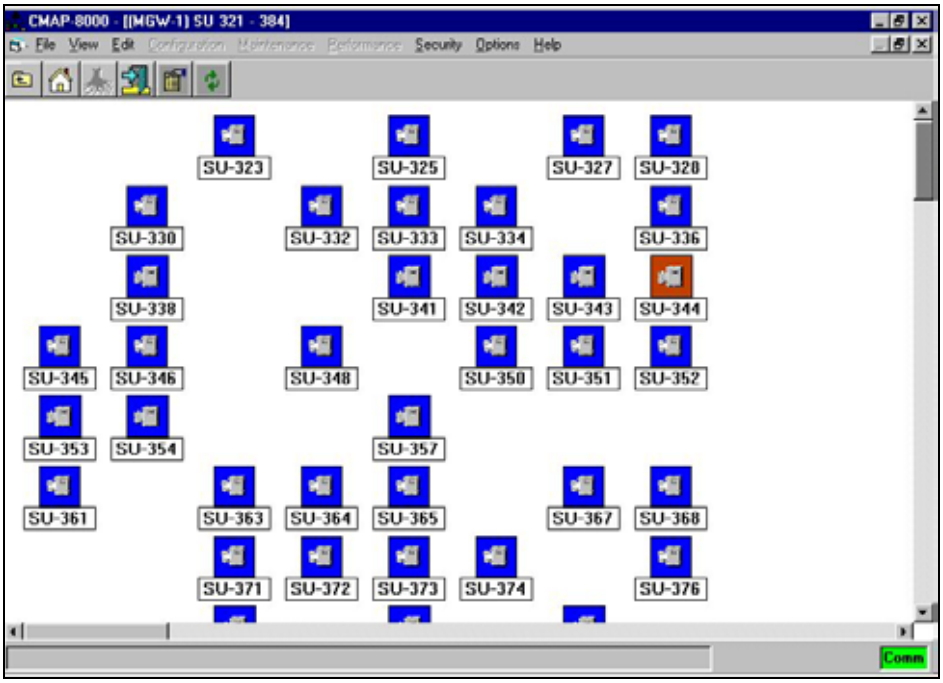


Figure 9-4: SU 321 – 384 Array

SU's associated with data or ISDN have the letters "D" or "I" respectively embedded in the icons, as shown below:

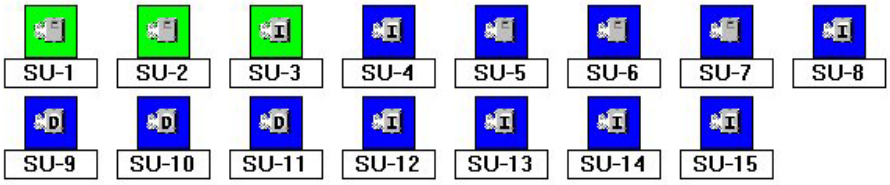


Figure 9-5: Data & ISDN, SU Icons

Version Information

Click an SU object in the SU array screen (Figure 9-2) and select the Configuration>Version Information menu item to display the respective SU Inventory and Version Information popup window:

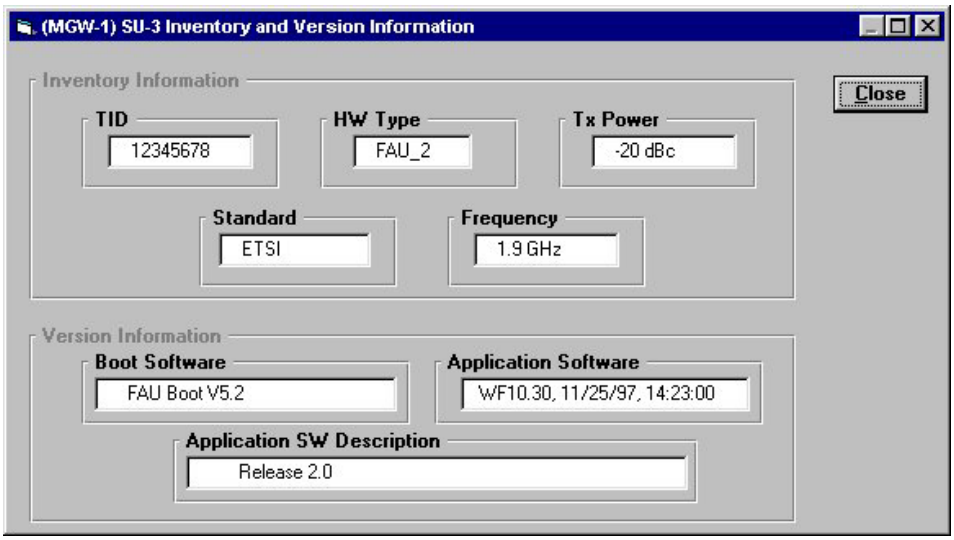


Figure 9-6: SU Inventory and Version Information Popup Window

The popup window displays the Inventory and Version Information for the selected SU. Click the Close button to return to the SU Array screen.

Sub/SU Parameter Provisioning

The Configuration>Provisioning>Sub/SU Parameters menu item is described under *Sub/SU Parameters*.

SU Registration

Highlight (click) a given SU and click the Configuration>Provisioning>SU Registration menu item to display the SU Registration popup window:

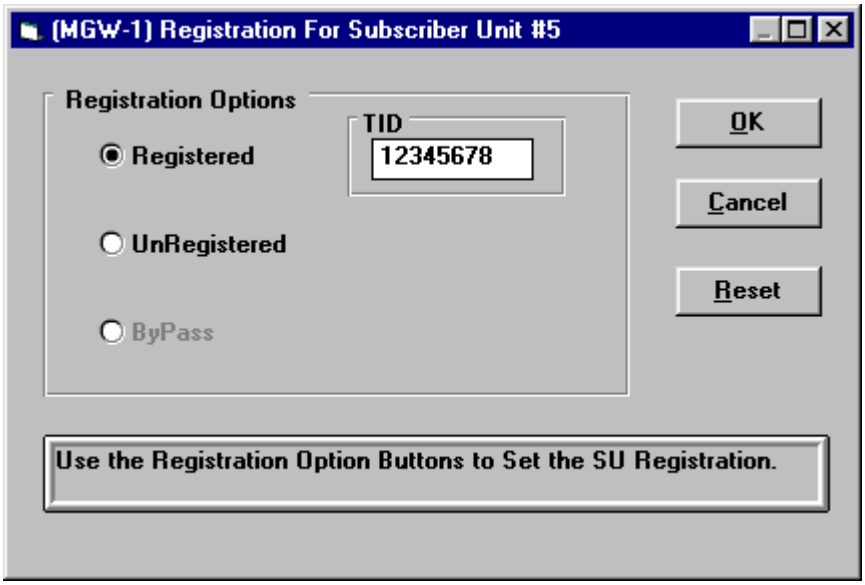


Figure 9-7: Registration For Subscriber Unit Window

The SU registration procedure is described under *Sub/SU Parameters*.

Check the required Registration Option and proceed accordingly.

NOTE

The SU Unit Array screen displays up to 64 SU elements that have been “created” SU elements not yet “created” are not visible on screen.

Maintenance

When a given SU is under maintenance, the letter “M” will appear in the object.

Highlight an SU and click the Maintenance menu item to display the dropdown menu:

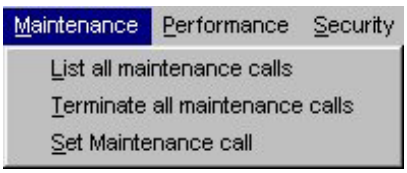


Figure 9-8: Maintenance Item in the Main Menu

The menu items listed above are described below.

List all maintenance calls

Click the List all maintenance calls to display the Active Maintenance Call List popup window (see *List all maintenance calls*.)

Terminate all maintenance calls

Click the Terminate all maintenance calls to terminate all maintenance calls.

Set maintenance call

Highlight (click) a given SU and click the Maintenance>Set maintenance call menu item to display the SU Maintenance Call Activity popup window:

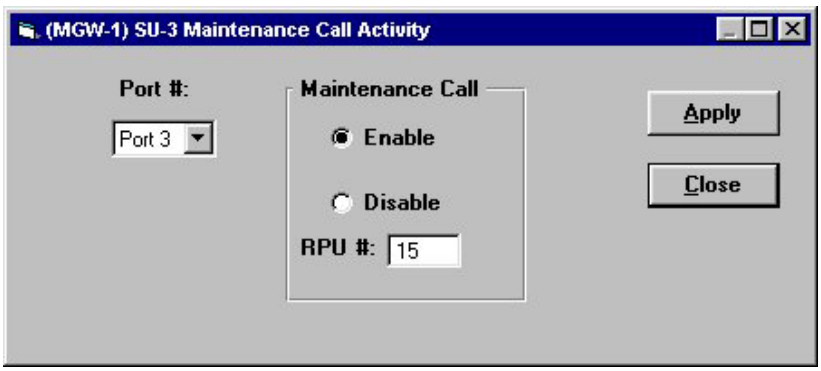


Figure 9-9: SU Maintenance Call Activity Popup Window

Select a Port to set up the Maintenance Call from the Port# dropdown list box (e.g., Port 3).

Check the appropriate Enable/Disable radio button in the Maintenance Call frame and click the Apply button to implement the required Maintenance Call action.

NOTE

The Maintenance Call is set up and terminated automatically under Version Information.

Performance

Highlight (click) a given SU object and click the Performance menu item to display the dropdown menu:

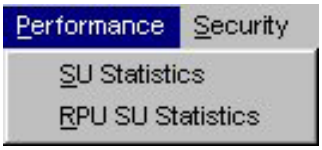


Figure 9-10: Performance Item in the Main Menu

The menu items are described below.

SU Statistics

Highlight (click) a given SU object and click the Performance>SU Statistics menu item to display the SU Statistics screen:

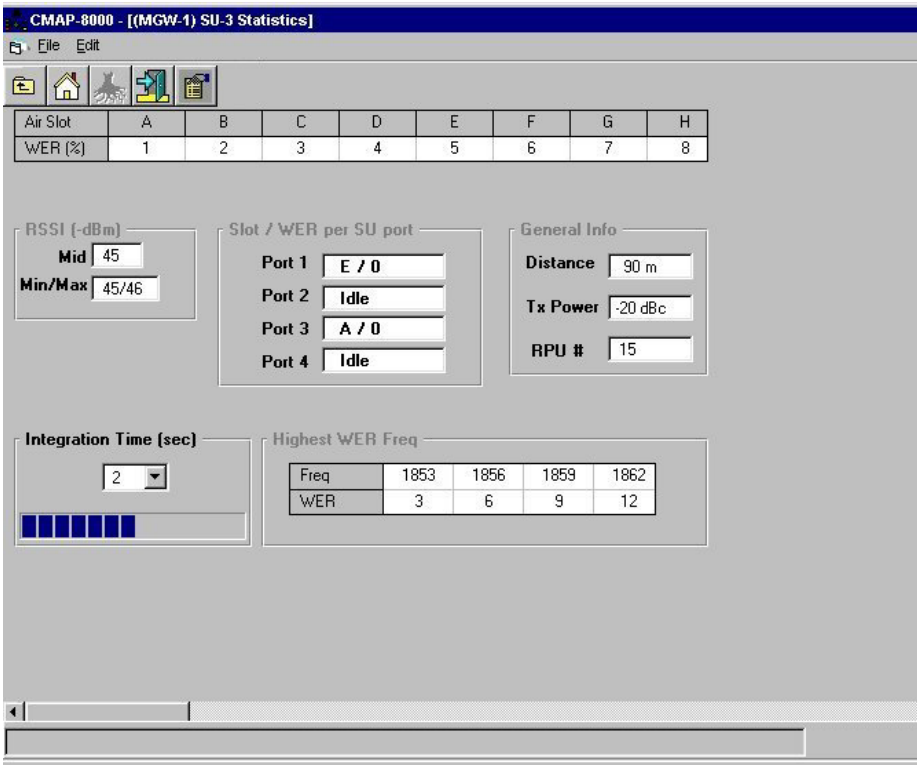


Figure 9-11: SU Statistics Screen

NOTE

The above screen has all the characteristics of a typical CMAP 8000 map screen.

The parameters displayed in Figure 9-11 are defined under "*RPU/RPC Statistics*"

The File menu item enables the user to Close/Print the screen.

The Edit menu item enables the user to lock the screen as required.

RPU/RPC SU Statistics

Highlight (click) a given SU object and click the Performance>RPU/RPC SU Statistics menu item to display the RPU/RPC SU Statistics screen:

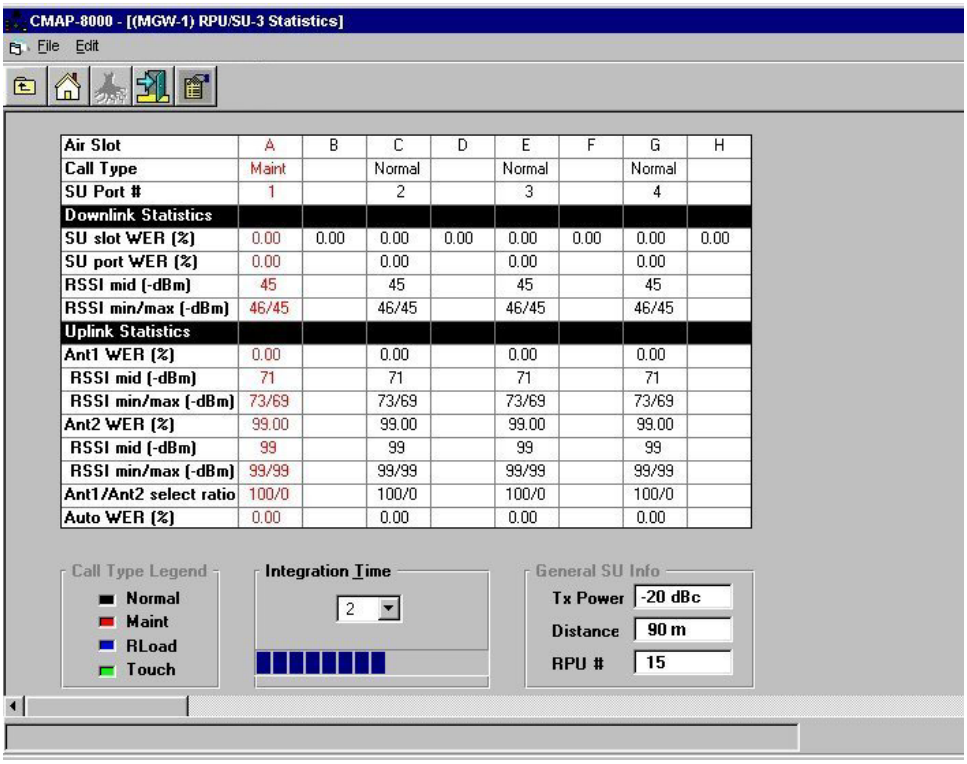

CMAP-8000 - [(MGW-1) RPU/SU-3 Statistics]
File Edit
Air Slot | A | B | C | D | E | F | G | H
Call Type | Maint | | Normal | | Normal | | Normal |
SU Port # | 1 | | 2 | | 3 | | 4 |
Downlink Statistics
SU slot WER (%) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00
SU port WER (%) | 0.00 | | 0.00 | | 0.00 | | 0.00 |
RSSI mid (-dBm) | 45 | | 45 | | 45 | | 45 |
RSSI min/max (-dBm) | 46/45 | | 46/45 | | 46/45 | | 46/45 |
Uplink Statistics
Ant1 WER (%) | 0.00 | | 0.00 | | 0.00 | | 0.00 |
RSSI mid (-dBm) | 71 | | 71 | | 71 | | 71 |
RSSI min/max (-dBm) | 73/69 | | 73/69 | | 73/69 | | 73/69 |
Ant2 WER (%) | 99.00 | | 99.00 | | 99.00 | | 99.00 |
RSSI mid (-dBm) | 99 | | 99 | | 99 | | 99 |
RSSI min/max (-dBm) | 99/99 | | 99/99 | | 99/99 | | 99/99 |
Ant1/Ant2 select ratio | 100/0 | | 100/0 | | 100/0 | | 100/0 |
Auto WER (%) | 0.00 | | 0.00 | | 0.00 | | 0.00 |
Call Type Legend
Normal
Maint
RLoad
Touch
Integration Time
2
General SU Info
Tx Power -20 dBc
Distance 90 m
RPU # 15

Figure 9-12: RPU/RPC SU Statistics Screen

The RPU/RPC SU Statistics screen informs the user of events at the RPU/RPC as well as the SU, for a given SU.

The parameters displayed in Figure 9-12 are defined under "*RPU/RPC Statistics*"

The File menu item enables the user to Close/Print the screen.

The Edit menu item enables the user to lock the screen as required.

SU Status

Double-click a given SU in the SU 1 – 64 Array Screen to display the SU status popup window:

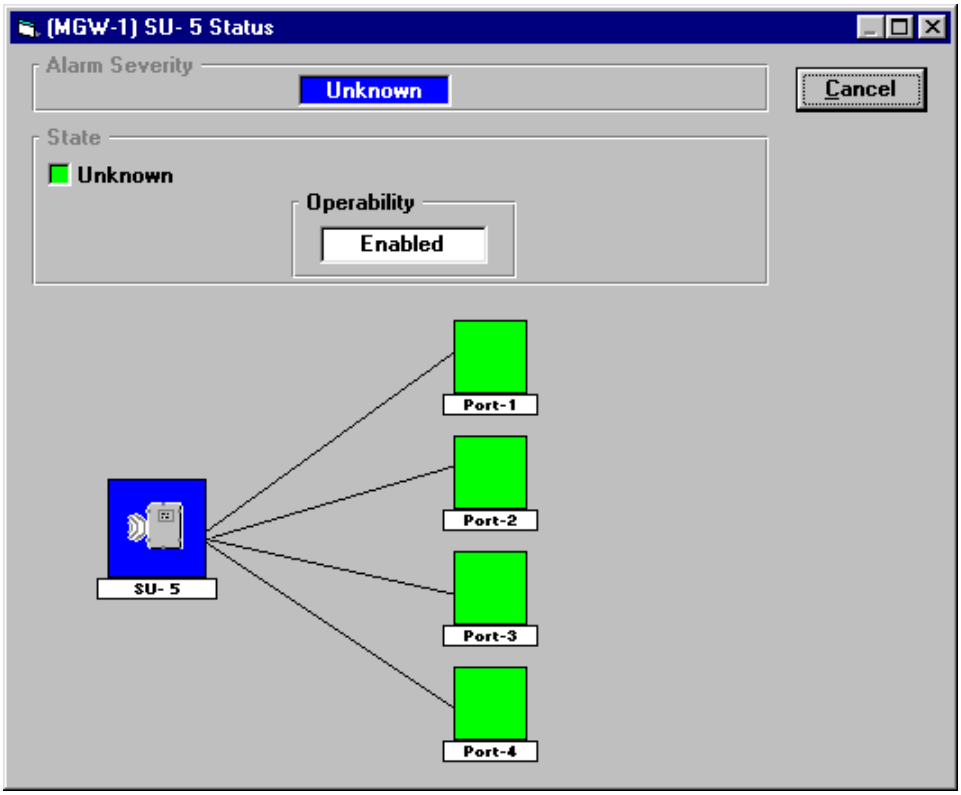


Figure 9-13: SU Status Popup Window

Ports with Maintenance Calls will display the letter “M” inside the respective object.

Ports with the letter “R” inside the respective object indicate remote session in progress.

The “Alarm Severity” frame severity level, according to the categories defined in “Alarm Log ,” Chapter 10, is displayed in the appropriate box.

The “State” frame indicates the status of the SU.

A red-round “Unknown” box indicates status no longer determined.

The “Operability” box displays “Enabled” or “Disabled.”

10

Chapter 10 - Alarm Log

In This Chapter

- General, page 10-2
- Screen Description, page 10-3
- Menu - File, page 10-7
- Menu - View, page 10-14
- Menu - Attend, page 10-20
- Menu - Clear, page 10-21
- Menu - Help, page 10-22

General

The CMAP 8000 Alarm Log is a visual record of all events occurring in the MultiGain Wireless system, such as:

- Changes to the system configuration
- Card definition activity
- Occurrence and rectification of card faults

By default, alarms are listed as they are received by the CMAP control system with time stamp in accordance with the PC's internal clock. The Alarm Log scrolls down as fresh occurrences are added to the alarm list. A new alarm is automatically highlighted irrespective of the user's current preoccupation with earlier alarm occurrences.

The user can intervene in a number of ways to make changes to the order in which the alarms are displayed in the Alarm Log:

1. Automatic display of fresh alarm occurrences can be suspended by activating the **View>Enable updates** menu item (*Enable Updates*) or the **View>Define filter** and **View>Queries** menu items (*Define Filter* and *Queries* respectively).
2. The sequencing of the alarms in the Log can be changed with respect to column headings to meet the user's specific requirements using the **View>Define filter** menu item (*Define Filter*).

The Alarm Log time stamp is the actual time that the alarm originates in the system. However, due to computer clock discrepancies, alarms can display with varying delay times in the Alarm Log. Thus, an alarm can appear in the Alarm Log, bearing an earlier time stamp than an alarm already appearing in the Alarm Log. The user can amend this anomaly by intervening to list the alarms according to ascending Time Stamp.

Screen Description

Click the button on the right of the Alarm Log title bar to maximize the screen:

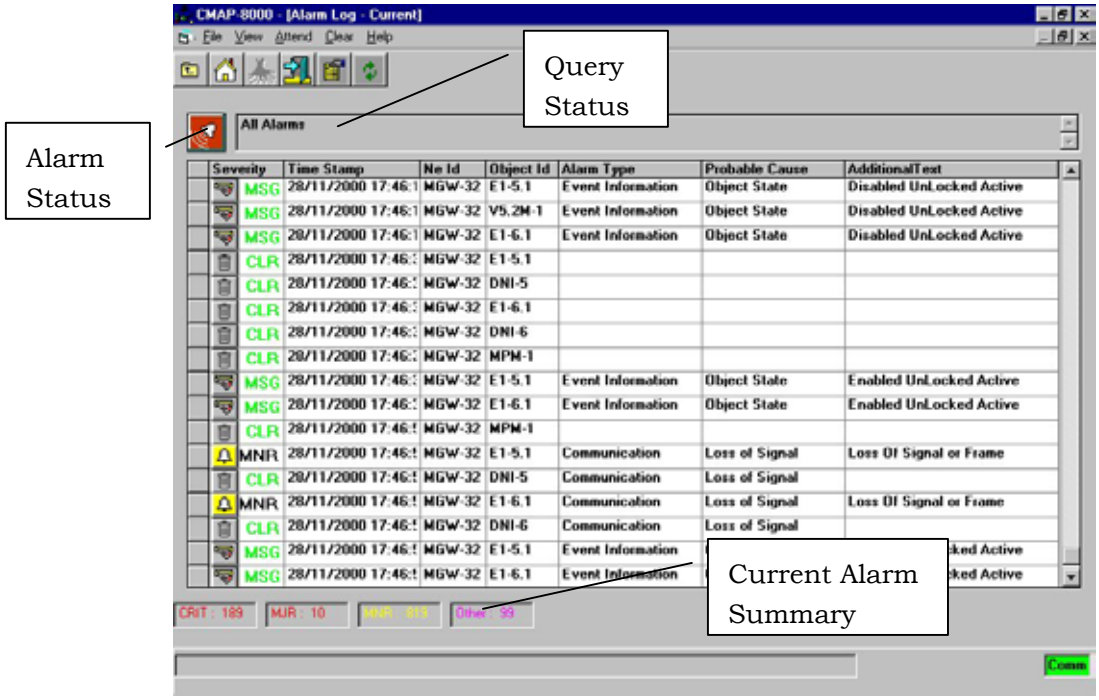

Alarm Status
Query Status
Current Alarm Summary
CMAP 8000 - [Alarm Log - Current]
File View Attend Clear Help
All Alarms
Severity Time Stamp Ne Id Object Id Alarm Type Probable Cause AdditionalText
MSG 28/11/2000 17:46:1 MGW-32 E1-5.1 Event Information Object State Disabled UnLocked Active
MSG 28/11/2000 17:46:1 MGW-32 V5.2M-1 Event Information Object State Disabled UnLocked Active
MSG 28/11/2000 17:46:1 MGW-32 E1-6.1 Event Information Object State Disabled UnLocked Active
CLR 28/11/2000 17:46:1 MGW-32 E1-5.1
CLR 28/11/2000 17:46:1 MGW-32 DNI-5
CLR 28/11/2000 17:46:1 MGW-32 E1-6.1
CLR 28/11/2000 17:46:1 MGW-32 DNI-6
CLR 28/11/2000 17:46:1 MGW-32 MPM-1
MSG 28/11/2000 17:46:1 MGW-32 E1-5.1 Event Information Object State Enabled UnLocked Active
MSG 28/11/2000 17:46:1 MGW-32 E1-6.1 Event Information Object State Enabled UnLocked Active
CLR 28/11/2000 17:46:1 MGW-32 MPM-1
MNR 28/11/2000 17:46:1 MGW-32 E1-5.1 Communication Loss of Signal Loss Of Signal or Frame
CLR 28/11/2000 17:46:1 MGW-32 DNI-5 Communication Loss of Signal
MNR 28/11/2000 17:46:1 MGW-32 E1-6.1 Communication Loss of Signal Loss Of Signal or Frame
CLR 28/11/2000 17:46:1 MGW-32 DNI-6 Communication Loss of Signal
MSG 28/11/2000 17:46:1 MGW-32 E1-5.1 Event Information
MSG 28/11/2000 17:46:1 MGW-32 E1-6.1 Event Information
CRIT : 189
MJR : 10
Comm

Figure 10-1: Alarm Log

NOTE

The Menu bar relates to the Alarm Log screen

You can vary the width of Alarm Log columns to expose hidden data. Dragging the right hand vertical frame line limit with the cursor in either direction does this.

When the “Alarm Status” button face shows a swinging bell, a new alarm is indicated:

Click the button to acknowledge and the button face to show a stationary bell on the currently severest alarm background:

Pressing the appropriate button in the vertical button bar implements alarm log navigation:

Navigate the alarm log as follows:

Table 10-1: Alarm Log Details

To…	Do this…		Or Use...
Scroll up one line	Click the up scroll arrow		Up arrow key
Scroll down one line	Click the down scroll arrow		Down arrow key
Scroll one column left	Click the left scroll arrow		Left arrow key
Scroll one column right	Click the right scroll arrow		Right arrow key
Scroll to a specific location	Drag the scroll box		
Scroll to top of window	Press **Page Up** key		
Scroll to bottom of window	Press **Page Down** key		
Go to top of Alarm Log	Press **Ctrl+Page Up** keys		
Go to bottom of Alarm Log	Press **Ctrl+Page Down** keys		
Go to first column	Press **Home** key		
Go to last column	Press **End** key		

The Alarm Log tabulates alarms in terms of:

1. **Severity**:

Table 10-2: Severity

Alarm	Description
Wrn	Warning
MNR	Minor single fault in the reporting element
MJR	Major fault on board or in the reporting element
CRIT	Critical (fault in the reporting element, such as no communication between NMI and MPM cards)

Table 10-2: Severity	
Alarm	**Description**
CLR	Problem resolved (applies to problems originally assigned a severity level). The CLR message is automatically given by the system when the problem has been solved either automatically by the system or manually by the operator
UNK	Unknown source of fault

2. **Time Stamp**: Time stamp (time and date based on PC date/time properties)
3. **Ne Id**: Network Element ID

   Ne ID is defined according to Ne Type and Ne Adrs.

   For example, Ne ID = MGW-1, describes Ne Type = MGW and Ne Adrs = 1.
4. **Object Id**:

Table 10-3: Object ID	
Type	**Object**
Unit	RPCU, RPU/RPC, SU
Cards	DNI, MPM, RPI, NMI
Facility	MDSL, E1

5. Object Id is defined according to Obj Class and Obj Instance.

   For example, Object Id = RPU/RPC-17.2, describes Obj Class = RPU/RPC and

   Obj Instance = 17.2.
6. **Alarm Type** (examples):

   List of possible types of alarm categories

   a. Communication

   b. Quality of Service

   c. Processing Error

   d. Equipment

e. Environmental

f. Undetermined

7. **Probable Cause** (in terms of Alarm Type):

Table 10-4: Probable Causes of Alarm Types

Alarm Type	Probable Cause
Communication	Loss of signal
	Loss of frame
	Framing error
	Degraded signal
	Communication subsystem failure
	Communication protocol error
Environmental	Temperature unacceptable
	Enclosure door open

The probable cause is self explanatory, without requiring further amplification or qualification.

8. **Additional Text**:

Further information on the Probable Alarm Cause.

The Alarm Report Summary is displayed in four adjacent boxes at the base of the table. The display enables the operator to monitor occurrence of new alarms in the system. The information is recorded on the hard disk and can be reviewed and erased by the operator as required.

The Query Status box (see Figure 10-1) summarizes the criteria governing the current Alarm Log display.

NOTE

When the modem is in use, an additional **Site** column is displayed, denoting the name of the currently connected site dialed from the modem address book.

Menu → File

Click on the File item in the menu bar to display the File sub menu:

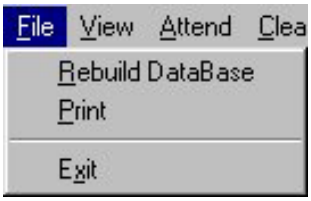


Figure 10-2: File Item in the Main Menu

Rebuild Database

"Rebuild Database" is invoked when there is reason to believe that the database has been affected in some way or other. For example, data has been cleared or the database is behaving unevenly, etc.

Click the File>Rebuild Database item to display the Rebuild Database pop-up window:

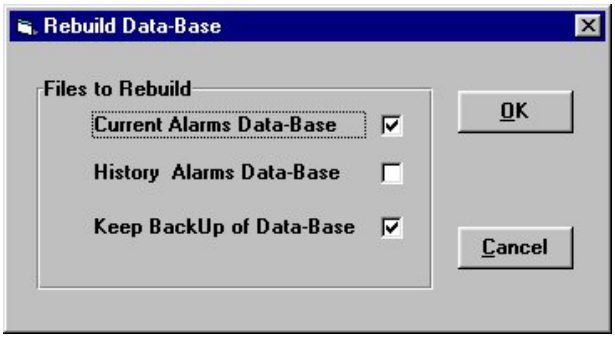


Figure 10-3: Rebuild Database Pop-up Window

Select either one or both current and historical databases by checking the appropriate check boxes and press "OK" to implement your request.

Check "Keep Backup of Database" to generate database backup.

NOTE

This item should be invoked after a large number of actions have been taken.

Print

Users can generate an alarm report for window display, printer hard copy or save to file.

Alarm reports print out according to the parameters displayed with the Alarm Log.

The Alarm Log can display data according to:

- All available information
- Filter conditions as defined under *Define Filter*
- User-defined queries under *Queries*

Emphasis should be placed on selection of appropriate filter conditions. After selection of filter conditions the result can be displayed in varying parameter configurations.

WARNING

Before invoking this item, make sure that the Printers option in the Windows Control Panel is configured correctly.

Click the File → Print item to display the Print - Report Options pop-up window:

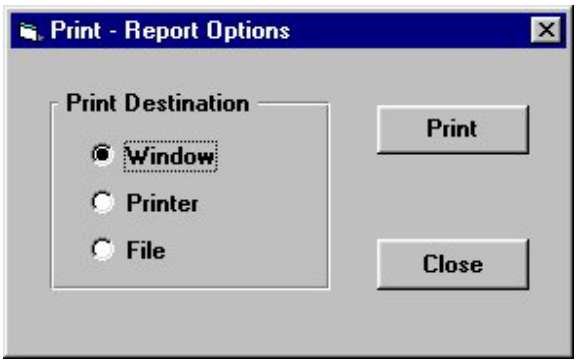


Figure 10-4: Print - Report Options Pop-up Window

Print Destination - Window

Check the "Window" radio button and press the Print button to display the Alarm Report pop-up window:

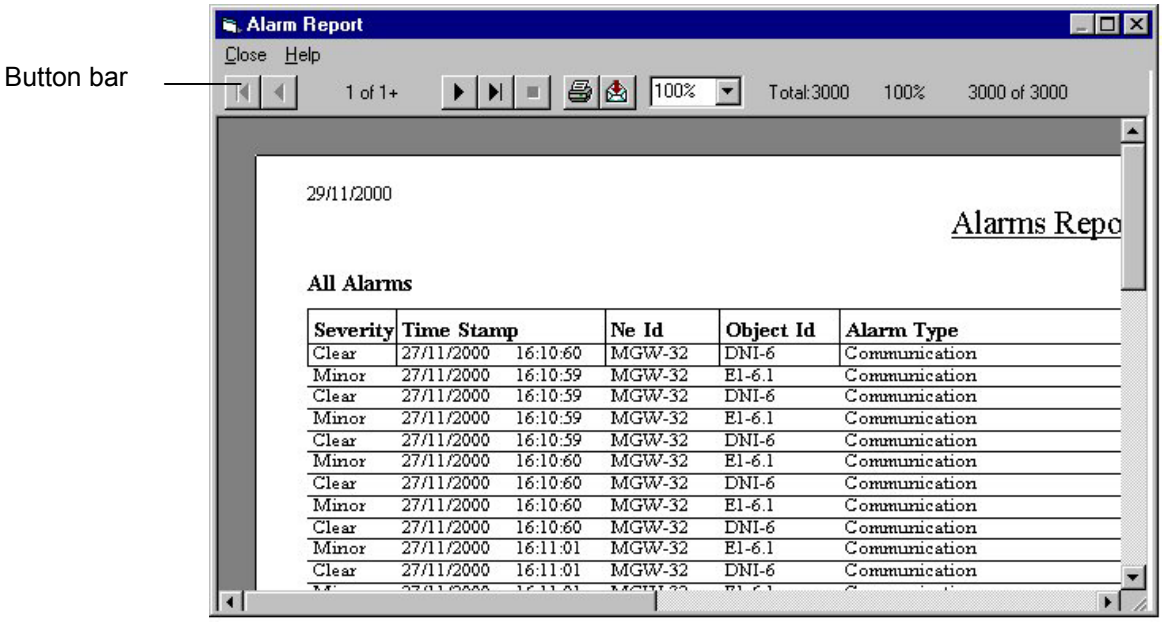

Button bar
Alarm Report
Close Help
1 of 1+
100%
Total:3000
100%
3000 of 3000
29/11/2000
Alarms Repo
All Alarms
Severity | Time Stamp | Ne Id | Object Id | Alarm Type
Clear | 27/11/2000 16:10:60 | MGW-32 | DNI-6 | Communication
Minor | 27/11/2000 16:10:59 | MGW-32 | E1-6.1 | Communication
Clear | 27/11/2000 16:10:59 | MGW-32 | DNI-6 | Communication
Minor | 27/11/2000 16:10:59 | MGW-32 | E1-6.1 | Communication
Clear | 27/11/2000 16:10:59 | MGW-32 | DNI-6 | Communication
Minor | 27/11/2000 16:10:60 | MGW-32 | E1-6.1 | Communication
Clear | 27/11/2000 16:10:60 | MGW-32 | DNI-6 | Communication
Minor | 27/11/2000 16:10:60 | MGW-32 | E1-6.1 | Communication
Clear | 27/11/2000 16:10:60 | MGW-32 | DNI-6 | Communication
Minor | 27/11/2000 16:11:01 | MGW-32 | E1-6.1 | Communication
Clear | 27/11/2000 16:11:01 | MGW-32 | DNI-6 | Communication

Figure 10-5: Alarm Report Pop-up Window

NOTE

The Alarm Report lists "All Alarms," the default listing when filter conditions are not otherwise defined.

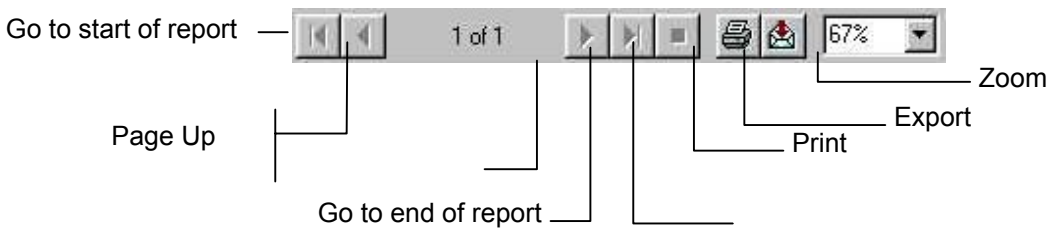
WARNING

DO NOT CLICK THE CLOSE MENU ITEM UNTIL PAGINATION OF THE REPORT IS COMPLETED (THE "CANCEL" ICON IS DISABLED).

Navigate the Alarm Report using the button bar, vertical and horizontal scroll bars.

NOTE

To terminate the report process and exit the screen, press the "Cancel" button and then click the Close menu item.



Print Button Option

Click the Print button in the Alarm Report button bar to display the Print pop-up window:

Figure 10-6: Print Pop-up Window

Define the "Print Range," number of "Copies" required and check the "Collate Copies" check box if required.

Click OK to start printing.

Export Button Option

Click the Export button in the Alarm Report button bar to display the Export pop-up window:

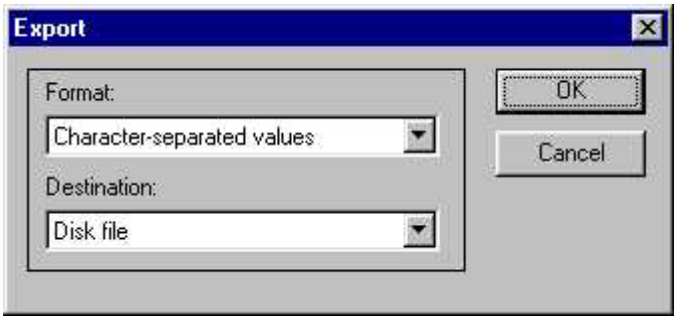


Figure 10-7: Export Pop-up Window (Export)

You can export the report according to your selection from a choice of standard formats listed in the Format drop-down list box:

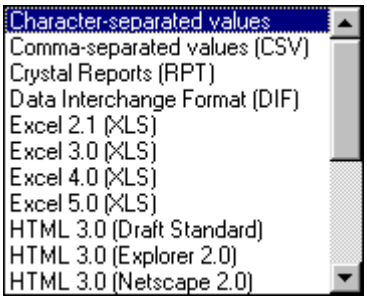


Figure 10-8: Format Drop-Down List Box

Assuming that you select the “Excel 5.0 (XLS)” format, click OK to display the Choose Export File pop-up window:

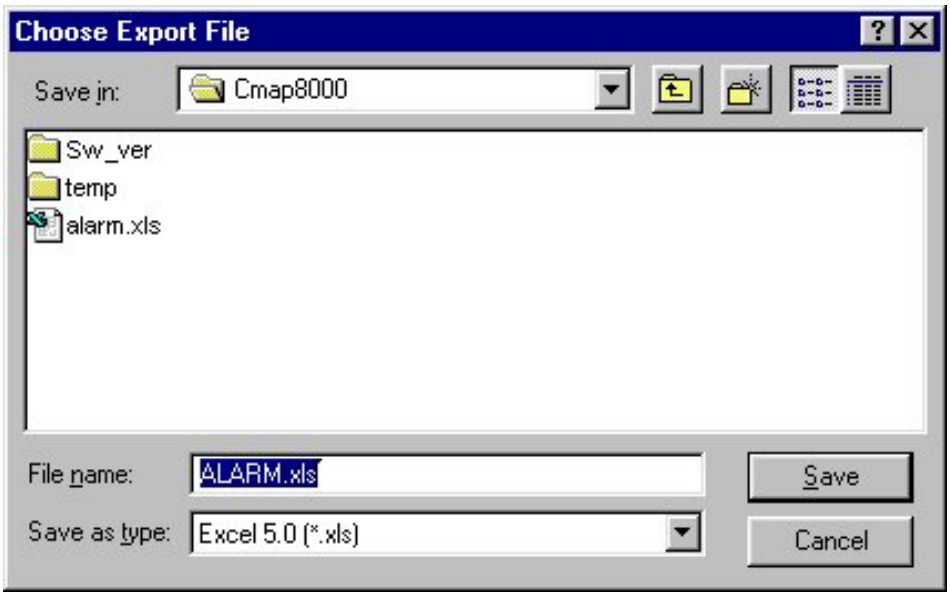


Figure 10-9: Choose Export File Pop-up Window

Select a folder using the “Save in” browser drop-down list box and name the file in the “File name” box.

Click Save to export the alarm report and return to the Alarm Log screen.

If Internet mail is installed in the PC, the user can select the Microsoft Mail (MAPI) destination option from the Destination dropdown list box:

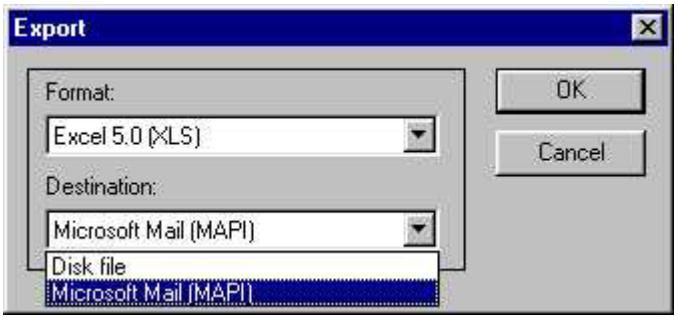


Figure 10-10: Export Pop-up Window (Microsoft Mail Destination)

Select the required format from the “Format” drop-down list box and click OK to display the Character-Separated Values window (for example):

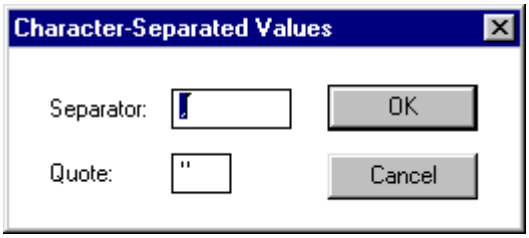


Figure 10-11: Character-Separated Values Window

Modify/accept values and click OK to display the Number and Date Format Dialog window:

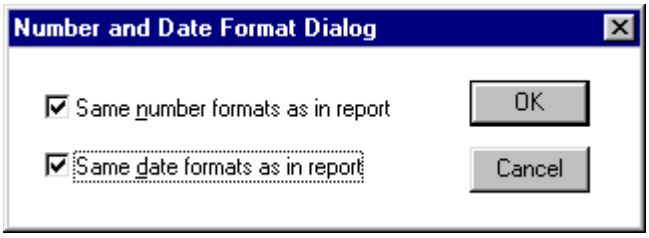


Figure 10-12: Number and Date Format Dialog Window

Mark or leave empty the respective check box and click OK to display the Send mail window:

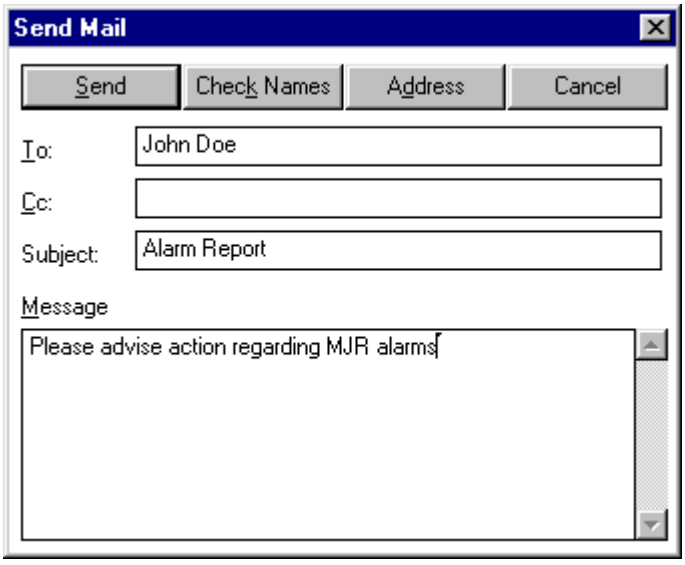


Figure 10-13: Send Mail Window

Complete the computerized form and click “Send” to mail attached alarm report to the addressee.

Print Destination - Printer

If you wish to print directly, check the “Print Destination: Printer” radio button and click the Print button to commence printing.

Print Destination – File

If you wish to print to file, check the “Print Destination: File” radio button and click the Print button to display the Enter The Report File Name window:

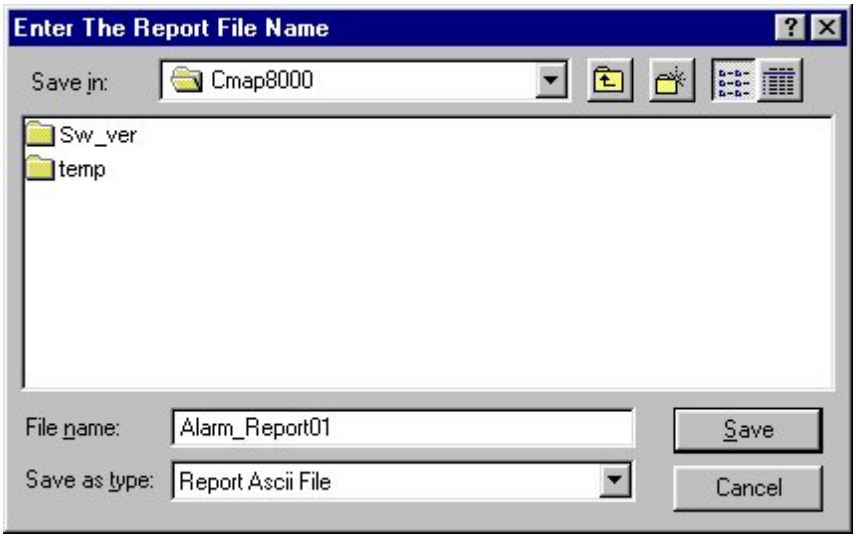


Figure 10-14: Enter The Report File Name Window

Chose a folder to “Save in,” enter a “File name” and click the Save button to create the file.

NOTE

When printing directly to “File”, ASCII format is the only available format under “Save as type:”. If another format is required, use the “Print Destination – Window” option from the Print – Report Options pop-up window.

Exit

Press the File → Exit item to exit CraftMap and return to Windows.

Menu → View

Click the View item in the menu bar to display the sub menu:

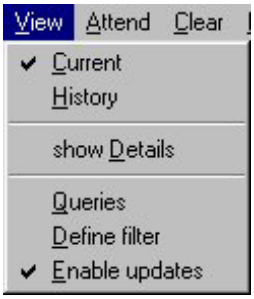


Figure 10-15: View Item in the Main Menu

Current/History

If you wish to review the Current alarm log status, click the View → Current item.

The View item enables you to review the two databases generated by the CraftMap: Current and History (historical) databases.

NOTE

Users can archive the History database by copying the database HISTALM.MDB to a file of their choosing, using standard Windows file manager procedures. The location of the database can be obtained from the Properties window. Note the database location and exit CMAP8000 before archiving the file.

When the CraftMap is initiated, the Current database is displayed as default.

If you select View → History, the Alarm Log - History database is displayed and the Attend menu item and Enable updates sub menu item are disabled.

Show Details

To show details of a listed alarm, highlight the particular alarm and click the show Details menu item to display the alarm details. If the CraftMap has no further information, the following window is displayed:

Figure 10-16: CMAP 8000 (No More Information) Message

NOTE

When you scroll through the Alarm Log, screen updating is terminated to enable you to scroll without interruption. After you have completed scrolling, click the **Enable updates** item (the ✓ mark should be visible) to enable alarm updating to continue and new alarms to appear in the log file.

Define Filter

Alarm information can be displayed according to selected conditions and in any given order. Proceed by clicking the View > Define filter menu item to display the Select Filter Options pop-up window:

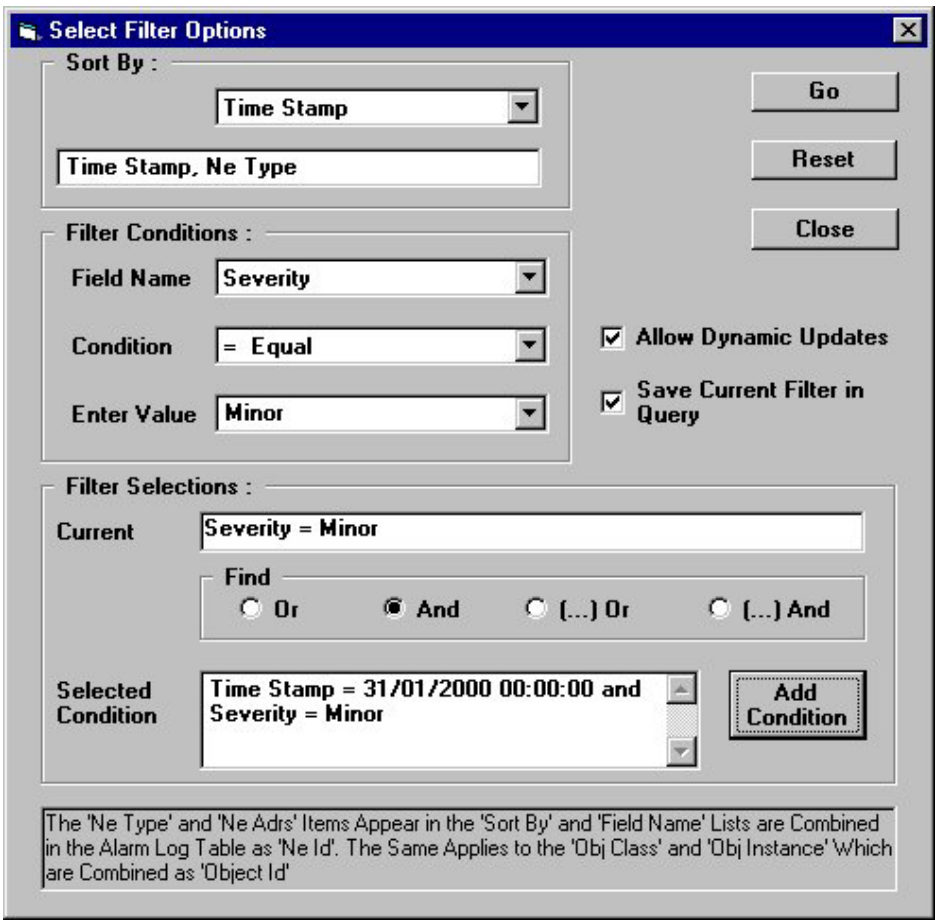


Figure 10-17: Select Filter Options Window

The user can select a parameter to "Sort By" from the corresponding dropdown list box. You can sort by one or more parameters. For example, if you select to sort by Obj Class and Obj Instance, in that order, the "Sort By" frame will display as:

Figure 10-18: "Sort By" Frame

According to this selection the alarms will be listed primarily by Obj Class and secondarily, by Obj Instance.

Proceed to set an initial condition in the Filter Conditions frame, entering the required values in the Field Name, Condition and Enter Value fields. Click the Add Condition button to enter the condition into the Selected Condition window.

NOTE

Before selecting "Obj Class" under Field Conditions/Field Name, the "Ne Type" should be specified, in order to display the appropriate details.

You can compound the filter conditions by selecting an appropriate Find radio button (Or/And/(...) Or /(...) And), setting a new condition, revising the previously selected condition (see Figure 10-17).

A more complex example is given below:

Set Obj Instance = 3.1 Or Obj Instance = 6.2 (...) And Obj Class = RPCU to obtain the following Selected Condition:

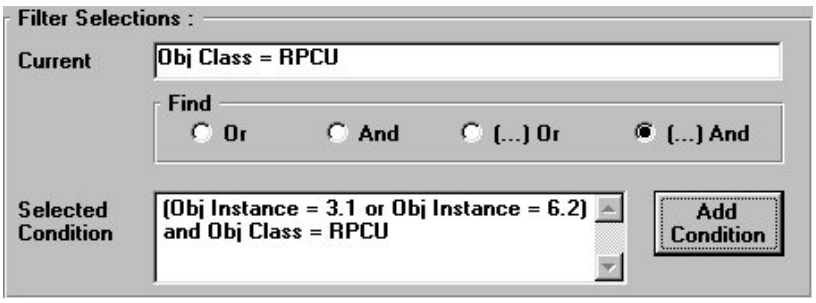


Figure 10-19: Filter Selection Frame

NOTE

The (...) Or and (...) And commands show all previous conditions in parentheses.

Check the "Allow Dynamic Updates" checkbox to enable all filtered alarms to be displayed online dynamically.

If you wish to save the selected filter conditions for further reference, then before clicking the Go button, check the "Save Current Filter in Query" checkbox to display the Enter Filter Name pop-up window:

Figure 10-20: Enter Filter Name Pop-up Window

Enter a name and click the OK button to display the Alarm Log subject to the selected filter condition/s (see Figure 10-21 below).

NOTE

When a filter is in use and only when the "Allow Dynamic Updates" checkbox is unchecked, the screen will not update automatically. When a new alarm registers, the user should click the oscillating bell to refresh the screen. Only alarms that meet the filter conditions will then display.

Click the Go button to display the Alarm Log subject to the selected filter condition/s:

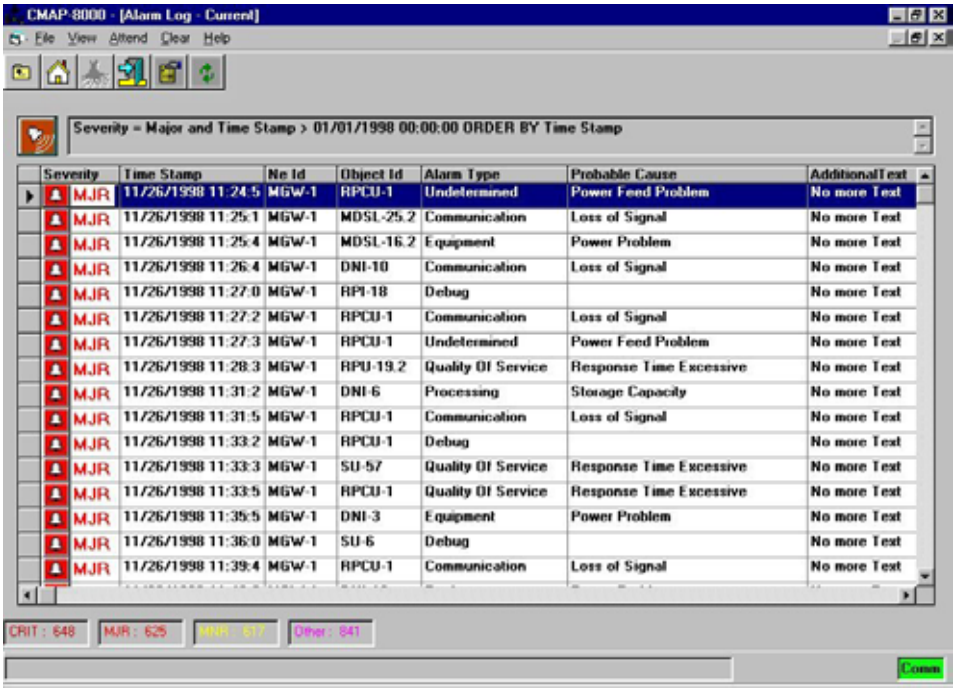

CMAP-8000 - [Alarm Log - Current]
File View Attend Clear Help
Severity = Major and Time Stamp > 01/01/1998 00:00:00 ORDER BY Time Stamp
Severity | Time Stamp | Ne Id | Object Id | Alarm Type | Probable Cause | AdditionalText
MJR | 11/26/1998 11:24:5 | MGW-1 | RPCU-1 | Undetermined | Power Feed Problem | No more Text
MJR | 11/26/1998 11:25:1 | MGW-1 | MDSL-25.2 | Communication | Loss of Signal | No more Text
MJR | 11/26/1998 11:25:4 | MGW-1 | MDSL-16.2 | Equipment | Power Problem | No more Text
MJR | 11/26/1998 11:26:4 | MGW-1 | DNI-10 | Communication | Loss of Signal | No more Text
MJR | 11/26/1998 11:27:0 | MGW-1 | RPI-18 | Debug | | No more Text
MJR | 11/26/1998 11:27:2 | MGW-1 | RPCU-1 | Communication | Loss of Signal | No more Text
MJR | 11/26/1998 11:27:3 | MGW-1 | RPCU-1 | Undetermined | Power Feed Problem | No more Text
MJR | 11/26/1998 11:28:3 | MGW-1 | RPU-19.2 | Quality Of Service | Response Time Excessive | No more Text
MJR | 11/26/1998 11:31:2 | MGW-1 | DNI-6 | Processing | Storage Capacity | No more Text
MJR | 11/26/1998 11:31:5 | MGW-1 | RPCU-1 | Communication | Loss of Signal | No more Text
MJR | 11/26/1998 11:33:2 | MGW-1 | RPCU-1 | Debug | | No more Text
MJR | 11/26/1998 11:33:3 | MGW-1 | SU-57 | Quality Of Service | Response Time Excessive | No more Text
MJR | 11/26/1998 11:33:5 | MGW-1 | RPCU-1 | Quality Of Service | Response Time Excessive | No more Text
MJR | 11/26/1998 11:35:5 | MGW-1 | DNI-3 | Equipment | Power Problem | No more Text
MJR | 11/26/1998 11:36:0 | MGW-1 | SU-6 | Debug | | No more Text
MJR | 11/26/1998 11:39:4 | MGW-1 | RPCU-1 | Communication | Loss of Signal | No more Text
CRIT : 648
MJR : 625
MNR : 617
Other : 841
Conn

Figure 10-21: Alarm Log (Subject to Filter Conditions)

The selected filter conditions are defined above the alarm log.

Queries

Click the View > Queries menu item to display the Queries To Filter Alarm Log pop-up window:

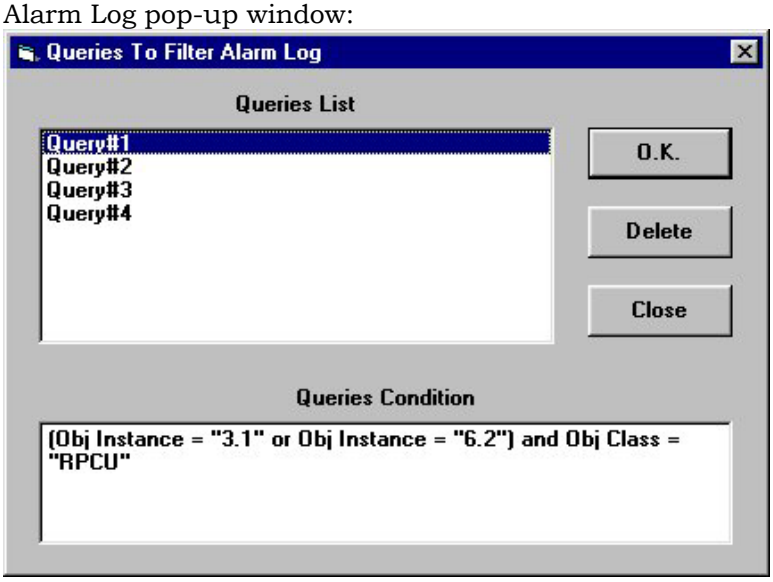


Figure 10-22: Queries Pop-up Window

The Queries List window lists the sets of alarm filter conditions defined by the user. Highlight a given Query and click the Ok button to display the Alarm Log subject to selected filter condition/s (see Figure 10-21 above).

To delete a Query from the Queries List window, highlight the given query and click the Delete button to expedite.

Enable Updates

When the Enable Updates menu item is displayed with a checkmark (default), thus:

the Alarm Log will continue to be updated, as alarms occur.

Click the Enable updates item to remove the checkmark and disable updating.

When View > History, the Alarm Log - History database is displayed and the Attend menu item and Enable updates sub menu item are disabled.

NOTE

This action negates the active filter and restores the screen to the “no filter” status.

Menu → Attend

The Attend item in the menu bar enables the user to save selected/all Current database events in the History database.

You can select individual, consecutive or separate alarm items as required. Select an item by placing the cursor in the empty cell to the left of the required alarm row and click the left hand mouse button to place an arrow in the cell.

To select consecutive alarm items, select the first item and hold down the SHIFT key and click the last item in the required list.

To select separate alarm items, hold down the CTRL key, and then click each item you wish to select in the cell to the left of the Alarm row: .

Click the Attend item in the menu bar to display the sub menu:

Figure 10-23: Attend Item in the Main Menu

Click the Selected sub menu item to display the CMAP confirmation message:

Figure 10-24: CMAP-8000 Message

Click “OK” to confirm your selection.

Press the All sub menu item to save all events in the Alarm log.

Menu → Clear

Click the Clear item in the menu bar to display the sub menu:

Figure 10-25: Clear Item in the Main Menu

The Clear item enables the user to delete Selected/All alarm events.

Select events as described above (*Menu → Attend*) and click the Selected sub menu item to display the CMAP confirmation message prompt:

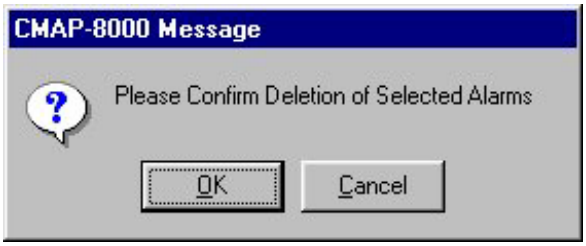


Figure 10-26: CMAP-8000 Message

Click "OK" to complete the action.

Click the All sub menu item to delete all events.

Menu → Help

Click the Help → About item in the main menu to display summary information about CMAP8000 and the Network Management Interface.

If the system resources fall below a threshold of 30%, the available system resources are at a critical level and the user is strongly advised to unload unnecessary programs from the system, thereby recovering system resources.

11

Chapter 11 - Security

In This Chapter

- Security Menu, page 11-2

Security Menu

The Security menu item allows the user to control system log-in and log-out operations, regulate access to menu items according to varying levels of responsibility and seniority (performed by the CraftMap supervisor via the Security/Menu Access item), as well as retrieve security alarm and access information as required.

Click the Security item in the main menu to display the menu items:

Figure 11-1: Security Item in the Main Menu

The various menu items are described below.

Login

Authorized users can access the active CraftMap by clicking the Security/Login item to display the LOGIN pop-up window:

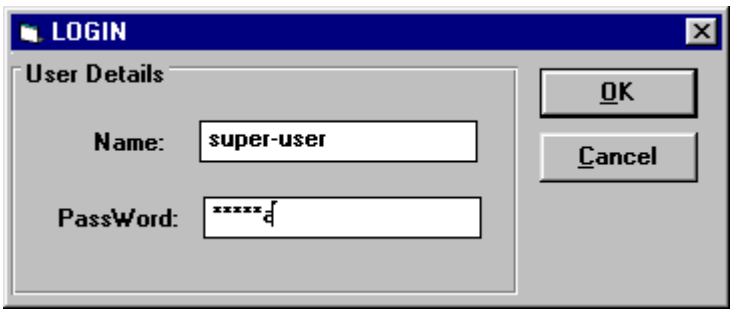


Figure 11-2: LOGIN pop-up window

The user can then complete the “Name” and “PassWord” fields, press OK and gain access to menu items according to his/her security rating. This operation automatically cancels earlier Login actions.

LogOut

To logout CraftMap, click the logOut item to display the pop-up window:

Figure 11-3: CMAP-8000 Message Pop-up Window

Press OK to establish lowest level of menu availability.

Menu Access

Click the Menu access item to display the LOGIN pop-up window.

Complete the "Name" and "PassWord" fields and press the "OK" button to display the SECURITY ACCESS window (only accredited supervisors can access this window):

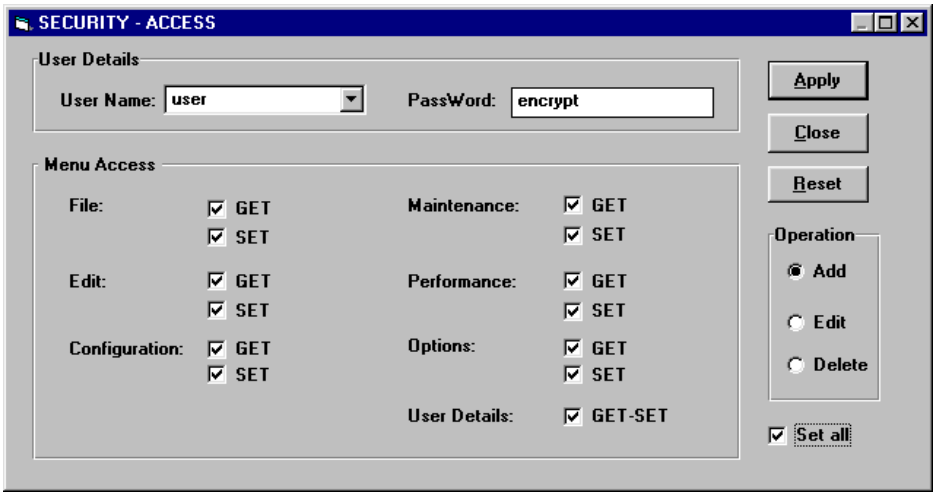


Figure 11-4: SECURITY - ACCESS Pop-up Window

The SECURITY - ACCESS window enables regulation of CraftMap availability in terms of "User Details" and "Menu Access:"

1. Enter the relevant "User Name" and "PassWord" for all potential users in the "User Details" frame.
2. Refer to the "Menu Access" frame, where each item is listed as GET and SET, denoting data retrieval and database modification respectively.

3. Enable a category by clicking the corresponding check box to display an "x."

4. When the Menu Access list is complete, press the "Apply" button to confirm settings.

The "Operation" frame contains three items: Add, Edit and Delete.

Click "Add" to nullify all Menu Access fields and display a blank "User Name" field.

To "Edit/Delete" a user, select the particular user in the "User" drop-down list box and click the desired "Operation" frame item.

Check the Set all checkbox to enable full access for the user.

Press the "Reset" button to reset all fields.

Press "Close" to exit the SECURITY - ACCESS window and return to the main screen.

Security Alarm

Click the Security alarm item to display the SECURITY ALARM window:

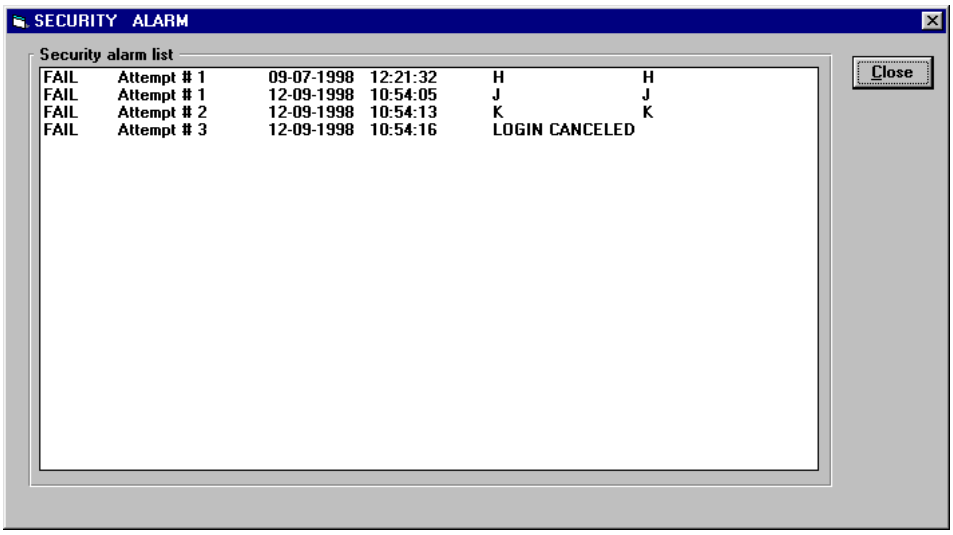

SECURITY ALARM
Security alarm list
FAIL Attempt # 1 09-07-1998 12:21:32 H H
FAIL Attempt # 1 12-09-1998 10:54:05 J J
FAIL Attempt # 2 12-09-1998 10:54:13 K K
FAIL Attempt # 3 12-09-1998 10:54:16 LOGIN CANCELED
Close

Figure 11-5: SECURITY ALARM Pop-up Window

This window displays a list of failed CraftMap access attempts in terms of Attempt #, Date of Attempt, User Name and PassWord.

Press "Close" to exit and return to the previous display.

Access Log

Click the Access Log item to display:

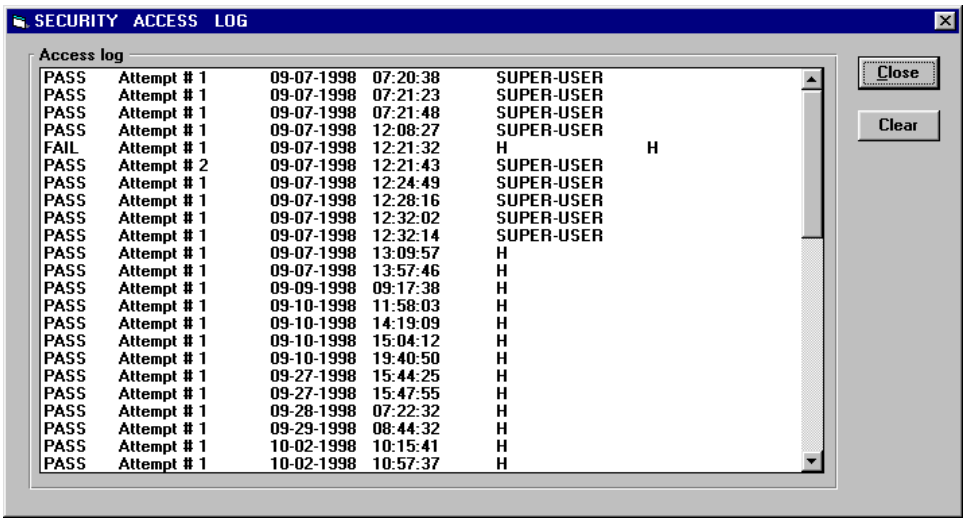

SECURITY ACCESS LOG
Access log
Close
Clear
PASS Attempt # 1 09-07-1998 07:20:38 SUPER-USER
PASS Attempt # 1 09-07-1998 07:21:23 SUPER-USER
PASS Attempt # 1 09-07-1998 07:21:48 SUPER-USER
PASS Attempt # 1 09-07-1998 12:08:27 SUPER-USER
FAIL Attempt # 1 09-07-1998 12:21:32 H H
PASS Attempt # 2 09-07-1998 12:21:43 SUPER-USER
PASS Attempt # 1 09-07-1998 12:24:49 SUPER-USER
PASS Attempt # 1 09-07-1998 12:28:16 SUPER-USER
PASS Attempt # 1 09-07-1998 12:32:02 SUPER-USER
PASS Attempt # 1 09-07-1998 12:32:14 SUPER-USER
PASS Attempt # 1 09-07-1998 13:09:57 H
PASS Attempt # 1 09-07-1998 13:57:46 H
PASS Attempt # 1 09-09-1998 09:17:38 H
PASS Attempt # 1 09-10-1998 11:58:03 H
PASS Attempt # 1 09-10-1998 14:19:09 H
PASS Attempt # 1 09-10-1998 15:04:12 H
PASS Attempt # 1 09-10-1998 19:40:50 H
PASS Attempt # 1 09-27-1998 15:44:25 H
PASS Attempt # 1 09-27-1998 15:47:55 H
PASS Attempt # 1 09-28-1998 07:22:32 H
PASS Attempt # 1 09-29-1998 08:44:32 H
PASS Attempt # 1 10-02-1998 10:15:41 H
PASS Attempt # 1 10-02-1998 10:57:37 H

Figure 11-6: SECURITY ACCESS LOG Pop-up Window

This window displays a list of all CraftMap access attempts and categorizes them according to PASS, FAIL and OUT (LogOut).

Browse through the list using the vertical scroll bar on the right of the window.

The window contains two control buttons: “Close” and “Clear.”

If you wish to clear the list, press the “Clear” button to display the clear SECURITY LOG FILE confirmation pop-up window:

Figure 11-7: CMAP-8000 Message Pop-up Window

Press the “Yes/No” button to exit and return to the main screen.

12

Chapter 12 - Options

In This Chapter

- Options Menu, page 12-2

Options Menu

The user can redefine communication features through the Options menu item.

Click the Options item in the main menu to open the item sub menu:

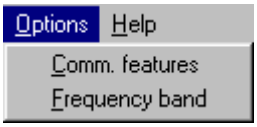


Figure 12-1: Options Item in the Main Menu

The menu items are described below.

Comm Features

Click the Comm features menu item to display the Comm Features pop-up window:

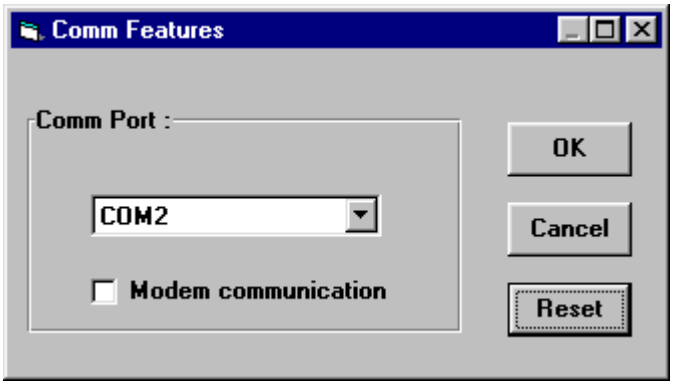


Figure 12-2: Comm Features Pop-up Window I

Select the relevant port from the Comm Port drop-down combination box.

If you require modem communication, check the Modem communication checkbox.

The Check Modem Communication pane opens up and the system checks the modem connection status of your PC:

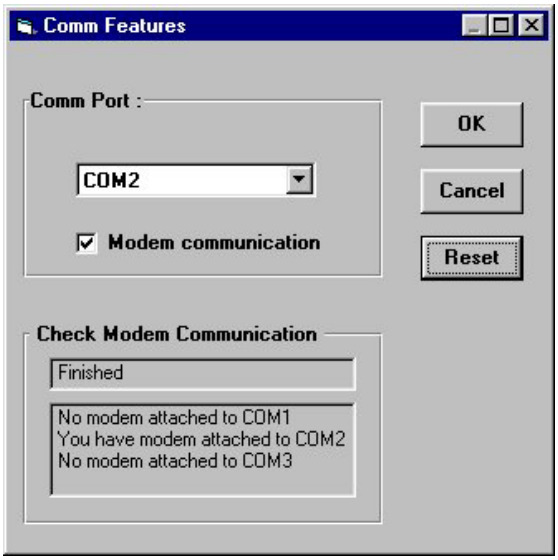


Figure 12-3: Comm Features Pop-up Window II

In Figure 12-3, the system indicates that a modem is attached to COM2, which is confirmed by the Comm Port drop down list box.

Click the OK button to return to the main screen.

NOTE

Note: Selection of the Modem communication option will result in the modem icon: being displayed in the button bar. Additionally, a "Modem" box will appear alongside the "Comm" box at the bottom right hand corner of the main screen. The "modem" box color scheme is as follows: black foreground, green background confirms modem connection; black foreground, red background denotes no modem connection.

Press the "Cancel" button to abandon the operation and return to the previous display.

Press the "Reset" button to recall the current comm. port setting.

If modem communication has been selected and confirmed, the Options menu will include two additional modem-related items:

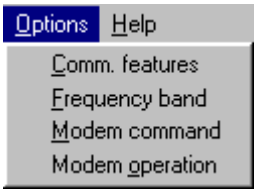


Figure 12-4: Options Menu

Frequency Band

You can select the Starting Frequency for the Frequency Pool.

Click Frequency band to display the Set Frequency Band pop-up window:

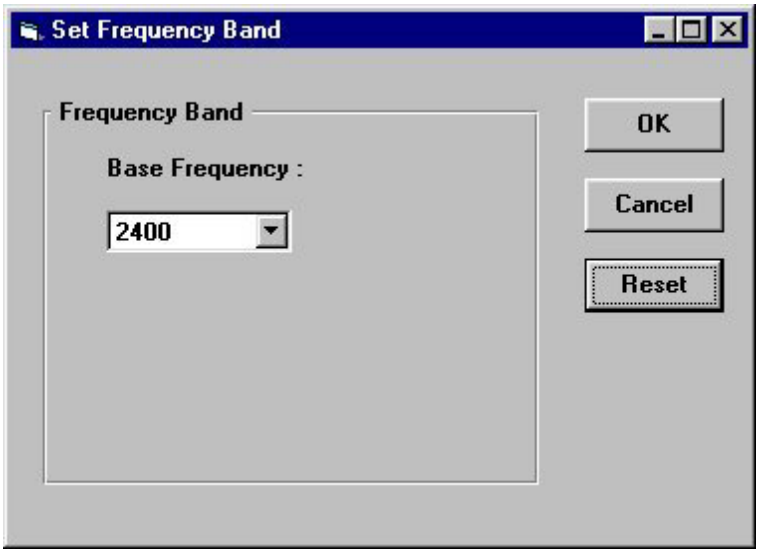


Figure 12-5: Set Frequency Band Pop-up Window

Select the relevant Starting Frequency from the drop-down combination box.

Click the OK button to confirm your selection and return to the previous display.

Press the “Cancel” button to abandon the operation and return to the previous display.

Press the “Reset” button to recall the current Starting Frequency setting.

Modem commands

To view the modem commands, click the Options → Modem commands item to display the Modem Information window:

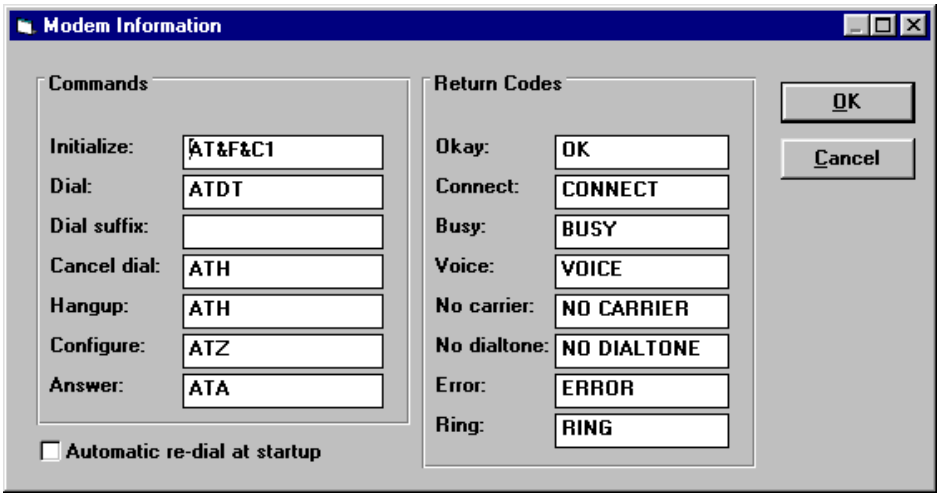


Figure 12-6: Modem Information Window

The user should add a delay time of between 1 and 2.5 secs, dependent upon modem type, after the ATDT command (delay before proceeding with dialing). The delay time will vary from modem to modem. In the case of Motorola modem types, a tilde ("~") should be added for every 0.125 secs delay, whereas in the case of US ROBOTICS, a "/" sign should be added.

Check the Automatic re-dial at startup box if this option is required.

Click OK to return to the main screen.

Modem operation

To initiate communications via the modem, click the Options → Modem operation item to display the Modem operation dialog window:

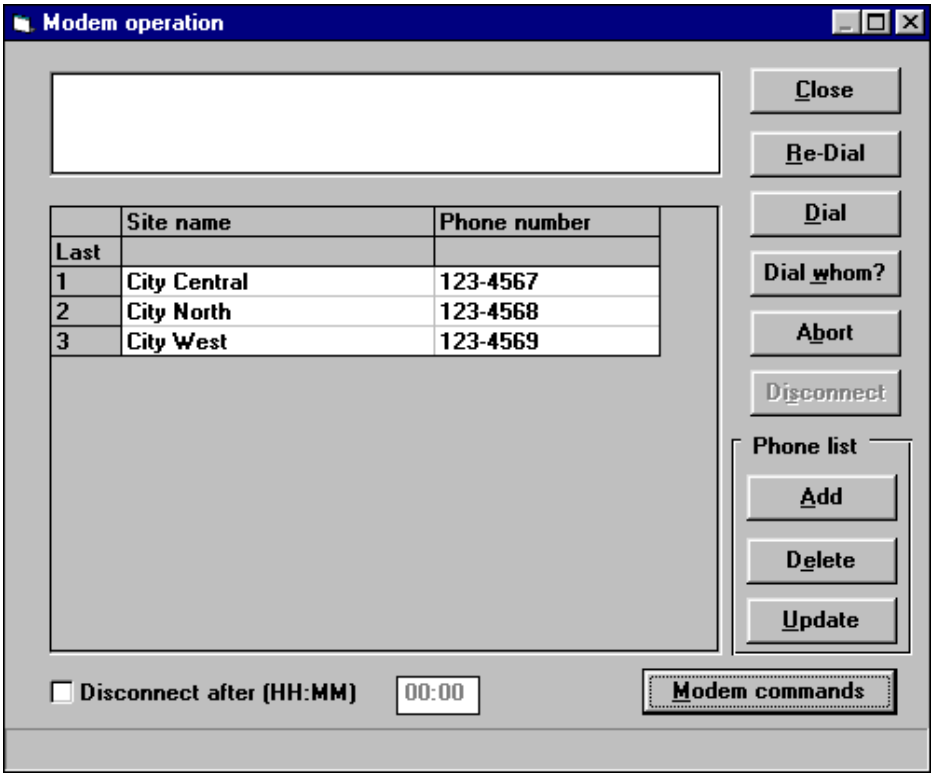


Figure 12-7: Modem operation Window

Phone numbers can be added, deleted and updated, using the appropriate buttons in the Phone list frame. To add a number, click the Add button to open the Address Book dialog window:

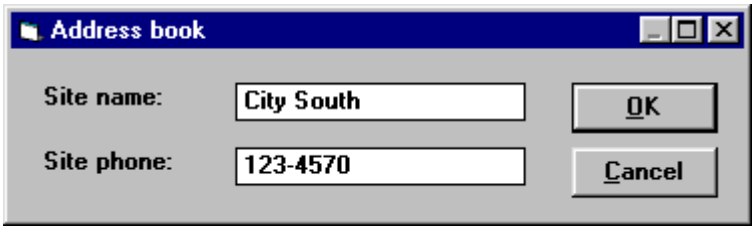


Figure 12-8: Address Book Window

Fill in the site name and phone number and press OK to return to the Modem operation window. The last called number is shown at the top of the list.

To delete or update a site and/or number, highlight the appropriate row in the list and press the Delete or Update buttons accordingly.

To communicate with a given site, highlight the site and hit the Dial button to initiate the call. Once the call is initiated, the Disconnect button is enabled. Hit the Disconnect button to terminate the call.

Hit the Dial whom button to manually dial a number.

If you wish to abort the call, hit the Abort button.

To re-dial a number, hit the Re-dial button.

Check the Disconnect after (HH:MM) box and enter the required time if this option is required.

Press the Modem Commands button to display modem information.

Press the Close button to return to the main screen.

13

Chapter 13 - Help

In This Chapter

- General, page 13-2

General

Click the Help/About item in the main menu to display summary information about CMAP8000 and the Network Management Interface:

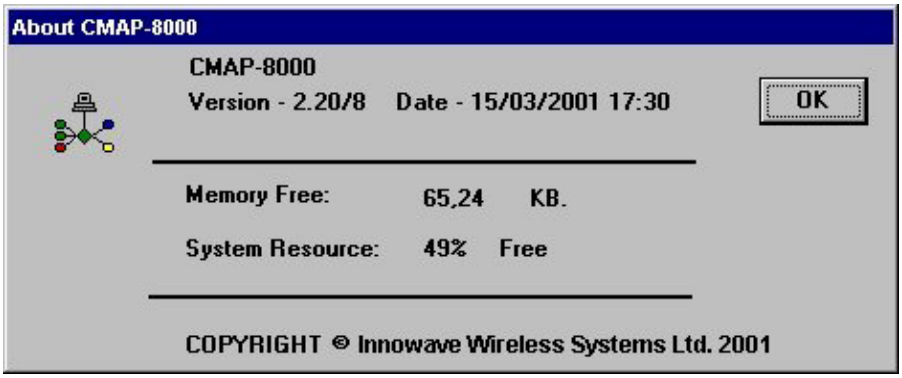


Figure 13-1: About CMAP-8000 Pop-up Window

If the system resources fall below a threshold of 30%, the available system resources are at a critical level and the user is strongly advised to unload unnecessary programs from the system, thereby recovering system resources.

A

Appendix A - Remote Monitoring (RMON)

In this Appendix

- General, on page A-2
- Typical View, on page A-5
- Monitoring and Control, on page A-10

General

The RMON utility enables software downloading as well as monitoring and control of the communication performance between RPU/RPC's and affiliated SU's. Performance is measured in terms of Word Error Rate (WER), according to respective time slots. The RMON utility provides the user with the means to perform troubleshooting.

Accessing RMON

The RMON can run with or without the CraftMap. In the former case, to access RMON press Alt+Tab (keyboard shortcut) to cycle through active applications. When the RMON application is indicated, release the Tab button to activate RMON. Use Alt+Tab to toggle between CMAP8000 and RMON. The initial RMON screen display following setup is shown below:

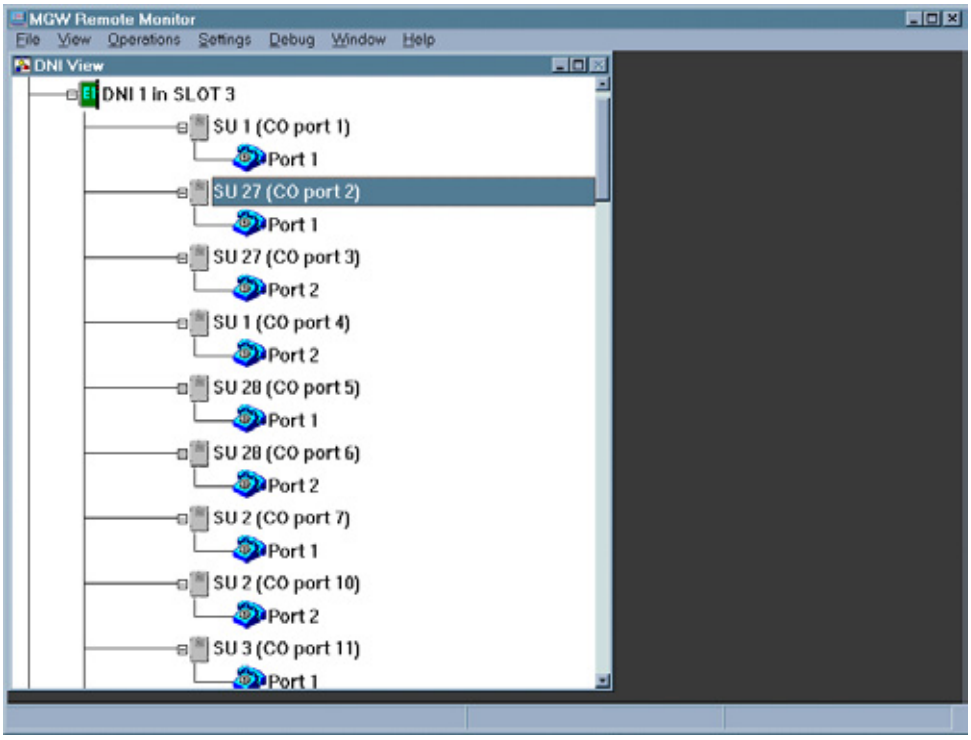


Figure A-1: MGW Remote Monitor - DNI View

In subsequent RMON sessions, the initial display is always the last active view.

To run RMON independently of the CraftMap, double-click the RMON icon from the Windows program manager.

The DNI view is initially displayed in fully expanded mode, showing the respective SU's and corresponding CO port for each DNI branch.

The main menu display and enabled menu item are a function of the active window and currently targeted object (selected node).

The status bar at the bottom of the MGW Remote Monitor Screen displays information about the cursor position and offers hints to the user on how to proceed.

NOTE

Use the window's vertical scroll bar to view the remaining section of the tree.
Press Ctrl+End to go to the end of the tree.
Press Ctrl+Home to go to the beginning of the tree.
Double-click the "–" sign to the left of the EI icon to collapse a given DNI branch.

The RMON enables the user to invoke three "View" windows:

1. DNI View
2. RPU/RPC View
3. SU View

The View windows relate to identical configurations, allowing the user to address a given element/s: RPU/RPC, SU, Port, DNI or RPCU, from different angles within the overall system. This gives the user a greater appreciation of the nodes from a real system point of view.

Thus, the user has two alternative views to chose from:

1. RPU/RPC View - From the main menu, invoke the View/RPU/RPC View item to display the active SU connections according to RPU/RPC number:

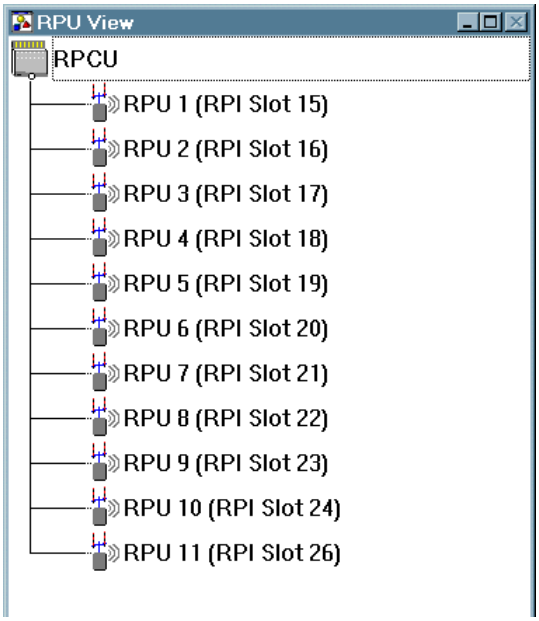

RPU View
RPCU
RPU 1 (RPI Slot 15)
RPU 2 (RPI Slot 16)
RPU 3 (RPI Slot 17)
RPU 4 (RPI Slot 18)
RPU 5 (RPI Slot 19)
RPU 6 (RPI Slot 20)
RPU 7 (RPI Slot 21)
RPU 8 (RPI Slot 22)
RPU 9 (RPI Slot 23)
RPU 10 (RPI Slot 24)
RPU 11 (RPI Slot 26)

Figure A-2: MGW Remote Monitor - RPU/RPC View

2. SU View - From the main menu, invoke the View/SU View item to display the SU nodes according to ID number:

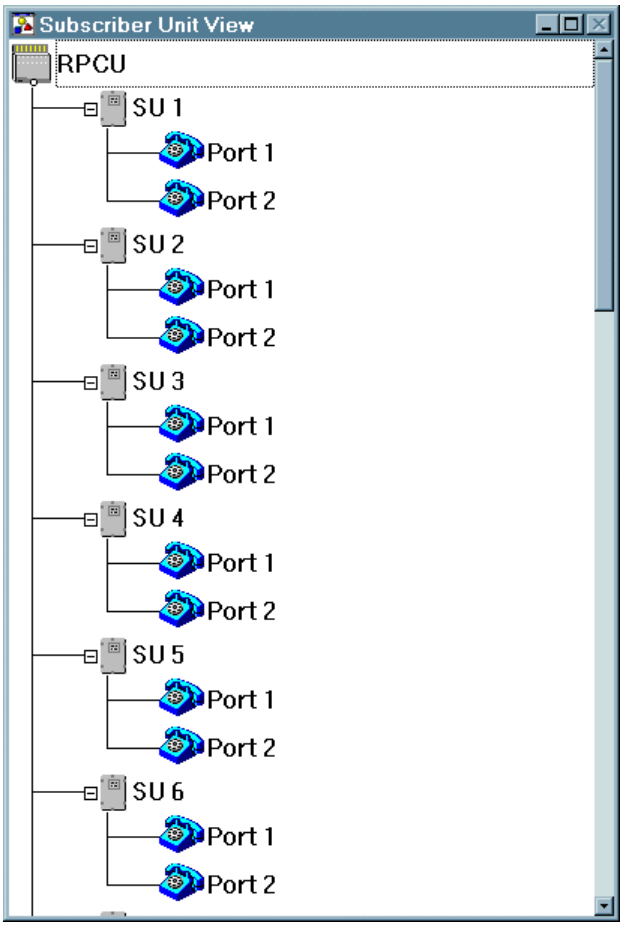


Figure A-3: MGW Monitor - Subscriber Unit View

TYPICAL View

When a DNI, RPU/RPC or SU view is displayed, the main menu items enabled are as follows:

Main Menu → File

Click File in the main menu to display sub menu items:

Table A-1: File - Sub Menu Items

Click	To
Print Setup...	Open the Windows Print Setup dialog window
Print Active Screen Ctrl+P	Open the Windows Print dialog window to print active window
Exit Alt+F4	Exit RMON and return to the Windows Program Manager.

Main Menu → View

Click View in the main menu to display sub menu items:

Table A-2: View - Sub Menu Items

Click	To
DNI View	Sort SU nodes according to CO port order (Figure A-1).
RPU/RPC View	Sort active SU connections according to RPU/RPC number (Figure A-2:).
SU View	Sort SU nodes according to ID number (Figure A-3).
Collapse All	Collapse tree branches in current view.
Expand All	Expand tree in current view.
Refresh	Synchronize View with system configuration and refresh. *Note: This operation takes a few moments to complete.*
Pop-up Tree	Return to view window.

Main Menu → Settings

Click "Settings" in the Main Menu bar to display the Settings sub menu items:

Table A-3: Settings - Sub Menu Items

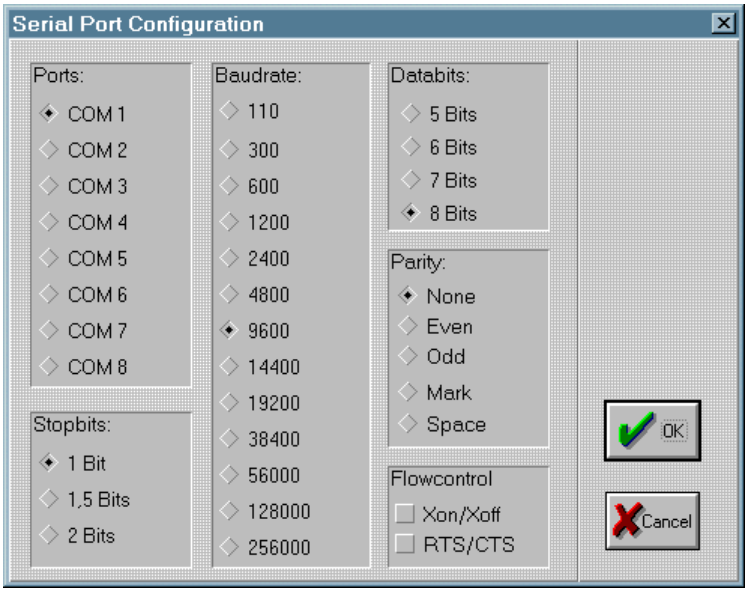
Click	To
Com settings	Display the Serial Port Configuration window:  **Figure A-4: Serial Port Configuration Window** The above window enables the operator to change the serial port settings. Use the Tab key or mouse to skip from section to section and use the mouse/arrow keys to move between the values in each section. Click the OK button to confirm and initiate the new settings and return to the MGW Remote Monitor.

Table A-3: Settings - Sub Menu Items

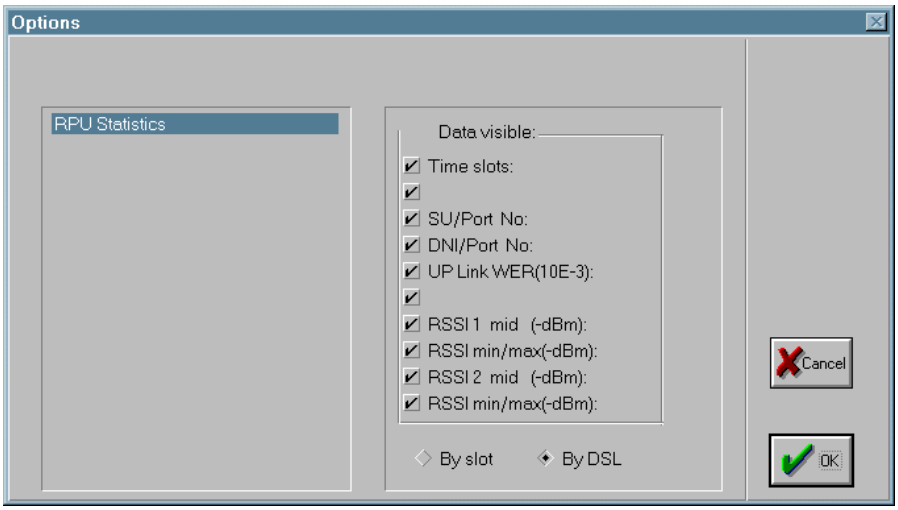
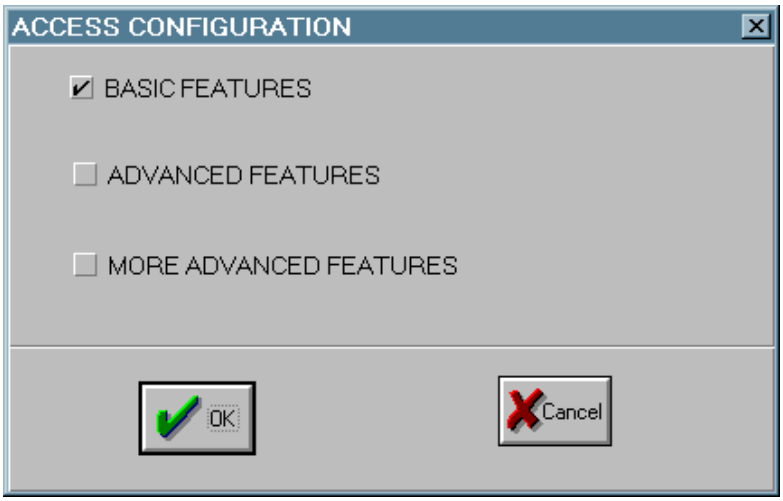
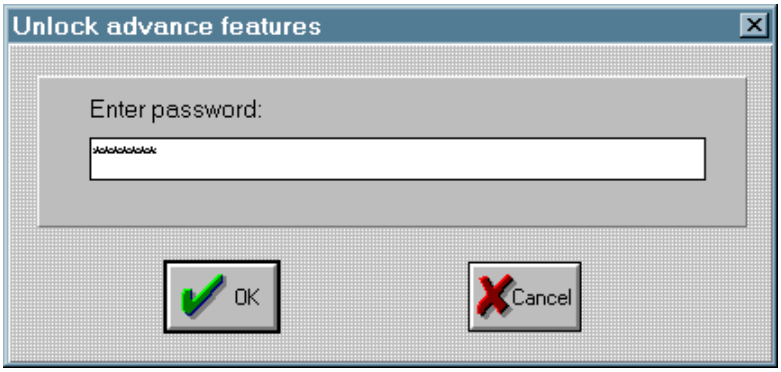
Click	To
View options	Display the Options window.  **Figure A-5: Options Window** This window enables the operator to remove/select parameters from the RPU/RPC Statistics table. Initially, the right hand frame is empty. Highlight "RPU/RPC Statistics" in the left-hand frame to display the "Data visible" list in the right hand frame. Check the "By slot" and "By DSL" boxes to display their corresponding "Data visible" lists. Check the respective items to be removed/selected and click the OK button to confirm and return to the MGW Remote Monitor.

Table A-3: Settings - Sub Menu Items

Click	To
Advanced Features	Display the Access Configuration pop-up window:  **Figure A-6: Access Configuration Window** The default access configuration enables all basic features. Check the Advanced Features item to open the Unlock Advance Features window:  **Figure A-7: Unlock Advanced Features Window** *Note: This item is intended for the use of senior technical personnel.* Enter the appropriate password in the "Enter Password" box and press the OK button to return to the Access Configuration Window. The Advanced Features check box will display a "✓" to confirm that the advanced features are enabled (see later). *Note: The "More Advanced Features" item is intended for use by Alvarion personnel only* Press the OK button to return to the MGW Remote Monitor.

Main Menu → Window

Click "Window" in the Main Menu bar to display the Window sub-menu items:

Table A-4: Window – Sub Menu Items

Click	To
Arrange Icons	Arrange item icons
Active Window	Display active window

Main Menu → Help

Cick "Help" in the Main Menu bar to display the Help sub-menu items:

Table A-5: Help – Sub Menu Items

Click	To
About...	To display the About RMON window: About RMON MGW REMOTE MONITOR. Version 2.20 INNOWAVE WIRELESS SYSTEMS LTD. Copyright © 2001. All Rights Reserved. Release 5.00 OK **Figure A-8: About RMON Window**

Monitoring & Control

RPU/RPC Selection

Click a given RPU/RPC (see Figure A-2:) to highlight the element and click “Operations” in the Main Menu bar to display the Operations sub menu items.

Alternatively, click the highlighted bar with the right hand mouse button to display the Operations menu and drag the cursor to the required menu item:

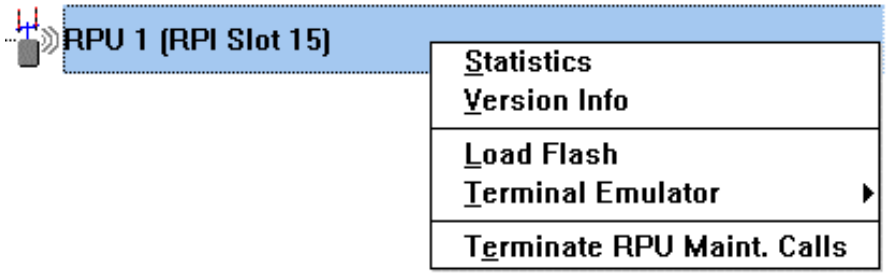


Figure A-9: Operations Sub Menu Items

Release the mouse button to display the corresponding window.

NOTE

The Main Menu items are now supplemented by the “Operations” item.

Operations sub menu items are:

Table A-6: Operations – Sub Menu Items

Click	To
Statistics	Display the main RPU/RPC Statistics screen for the selected RPU/RPC:

Statistics of RPU 2
Time slot A B C D E F G H
DSL No: 2 5 6 4
DNI/Port No: 1/21 1/27 1/30 1/24
ANT 1 WER (10E-3): 0 0 0 0
RSSI mid (-dBm): 77 77 78 77
RSSI min/max(-dBm): 78/76 78/76 79/76 79/76
ANT 2 WER (10E-3): 998 998.4 999.2 998
RSSI mid (-dBm): 99 99 99 99
RSSI min/max(-dBm): 99/20 99/20 99/20 99/20
ANT selection: 100/0 100/0 100/0 100/0
Auto WER (10E-3): 0 0 0 0
Legend:
RLoad
Maint
Touch
Normal
Print
Log to file
Integration Time: 5
Antenna: Receive: 1 Transmit: 1
Sort by:
slot
DSL

Figure A-10: RPU/RPC Statistics (slot sort)

The RPU/RPC statistics displayed in Figure A-10 are sorted according to Time Slot. The RPU/RPC statistics are alternatively sorted according to DSL. Slot/DSL selection is made by checking the appropriate item in the "Sort by" frame in the bottom right hand corner of the screen.

RPU/RPC statistics sorted according to DSL are shown below:

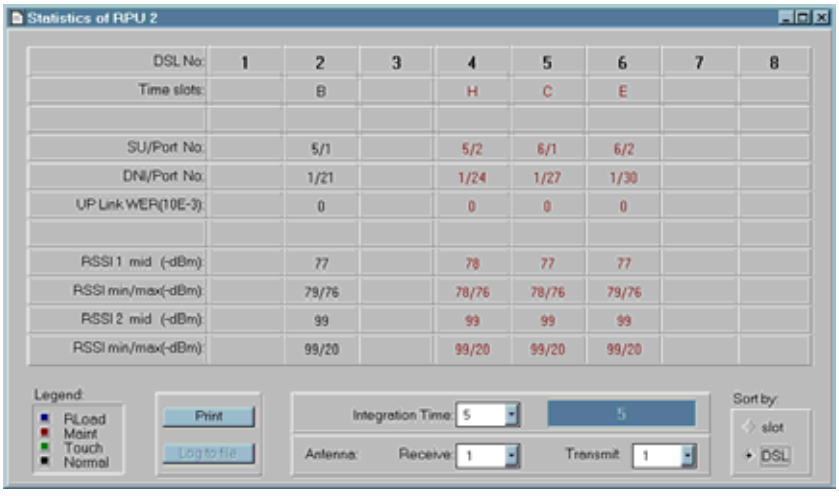

Statistics of RPU 2
DSL No: 1 2 3 4 5 6 7 8
Time slots: B H C E
SU/Port No: 5/1 5/2 6/1 6/2
DNI/Port No: 1/21 1/24 1/27 1/30
UP Link WER(10E-3): 0 0 0 0
RSSI 1 mid (-dBm): 77 78 77 77
RSSI min/max(-dBm): 79/76 78/76 78/76 79/76
RSSI 2 mid (-dBm): 99 99 99 99
RSSI min/max(-dBm): 99/20 99/20 99/20 99/20
Legend:
RLoad
Maint
Touch
Normal
Print
Log to file
Integration Time: 5
Antenna: Receive: 1 Transmit: 1
Sort by:
slot
DSL

Figure A-11: RPU/RPC Statistics (DSL sort)

Table A-6: Operations – Sub Menu Items

Click	To
	Performance and communication are controlled through the "Integration Time" and "Antenna Receive/Transmit" drop-down list boxes respectively, located at the bottom center of the RPU/RPC Statistics Screen: ■ Integration Time – The time duration for WER measurement (default 10 sec). The Integration Time is selected from the drop down list by clicking the arrow box to the right of the box and selecting the required integration time: 2, 5, 10, 15, 20, 60. Note that there are 500 "hops" per second. ■ Antenna Received/Transmit - Each box enables selection of one of three options - AUTO, 1 or 2. The AUTO option enables automatic antenna selection by the RPU/RPC. 1 or 2 selection sets the radio to function exclusively with respect to the selected antenna. Statistics are displayed for the following parameters: ■ AIU No. - Displays the physical line connecting the User ■ ANT 1/2 WER - WER of receiver to which ANT1/2 are connected respectively. ■ ANT 1/2 selected - Percentage time usage by each antenna. ■ DSL No. - Digital Subscriber Line Number ■ RSSI - Radio Signal Strength Indication (dBm) ■ SU/Port No. - FAU ID Number/Port No. ■ DNI/Port - Subscriber Number with respect to a given RPU/RPC ■ UP Link WER - WER "looking" from RPU/RPC A WER reading in excess of 10-2 could indicate signal interference or path malfunction, requiring further investigation An excessive WER in one or other antennas with respect to the other antenna indicates that the latter is subject to persistent interference, requiring attention. Another cause could be antenna/receiver operation malfunction. Double click the button in the top left-hand corner of the RPU/RPC statistics window to return to the MGW Remote Monitor.

Table A-6: Operations – Sub Menu Items

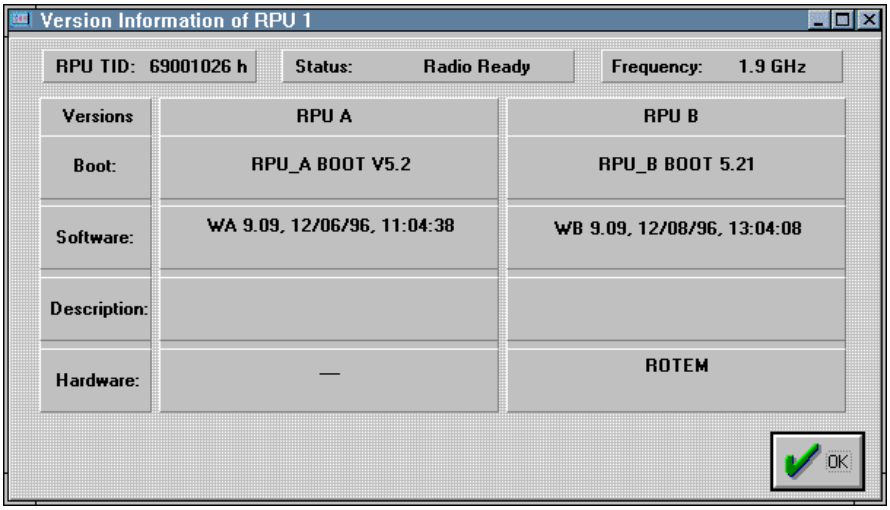
Click	To
Versions Inf.	Click the "Versions Inf." item to display the Version Information window for the given RPU/RPC:  **Figure A-12: Version Information of RPU/RPC** The Version Information window displays information on the two CPU's (RPU A and RPU B), associated with a given RPU. The Version Information window displays information on the two CPU's (RPU A and RPU B), associated with a given RPU.

Table A-6: Operations – Sub Menu Items

Click	To
Load Flash	Display the Load Flash dialog window (**accessible to senior technical personnel only**):

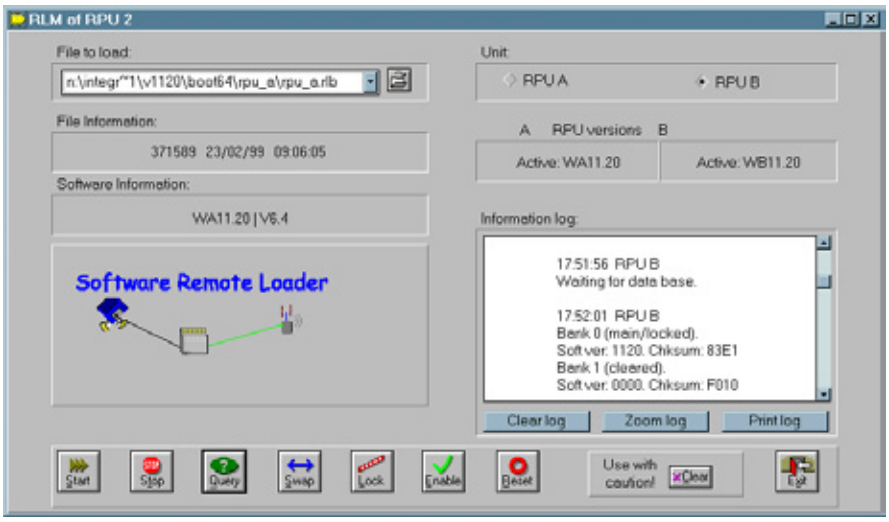


Figure A-13: RLM of RPU/RPC (Load Flash Dialog Window)

The Load Flash dialog window enables the following operations:

- **Choice of Destination**: All Flash Remote Loading operations relate to RPU_A, RPU_B. The choice of destination is made by clicking one of the "Unit" buttons (see RPU_B in Figure A-13).
- **Status Determination (Query button)**: Click the "Query" button on the tool bar at the bottom of the Load Flash dialog window to display the Flash bank status of the selected unit in the "Information log" window (RPU B).

Note: The "Clear log," "Zoom log" and "Print log" buttons below the Information log enable the user to clear, zoom in and print the contents of the Information log window respectively, as required.

- **Bank Clearance (Clear button):** Click the "Clear" button on the tool bar at the bottom of the Load Flash dialog window to erase the bank other than the MAIN bank. Activation of the "Lock" function is recommended beforehand.
- **File selection for loading (File to load box)**:
  Use the "File to load:" drop-down list box the select a file for loading. Click the prompt button to view the current list. Alternatively, click the browse button to open the "Open" dialog window to view the computer file and directory structure:

Table A-6: Operations – Sub Menu Items

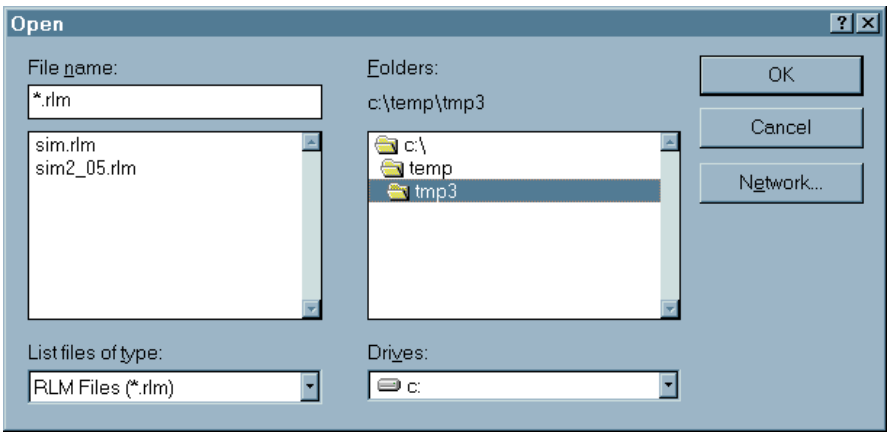
Click	To
Load Flash (continued)	

Figure A-14: Open Dialog Window

- **File Loading (Start load button)**: Click the "Start load" button on the tool bar at the bottom of the Load Flash dialog window to load a HEX-formatted file to the selected card.
- **Bank Enabling (Enable button)**: After **loading** a file into the bank, bank CODE readability is verified by pressing the Enable button (RPU/RPC software replacement only).
- **Bank Replacement (Swap button)**: Click the "Swap" button on the tool bar at the bottom of **the** Load Flash dialog window to replace the bank marked "ACTIVE" by the bank marked "SECONDARY." Bank replacement will reset the RPU/RPC and consequently cause loss of contact with RMON, if the reset action is applied to RPU_A or RPU_B. Replacement between banks can be completed 14 times without the need for loading.

Note: After "Swap," any power failure or "Watch Dog" will be followed by automatic bank replacement until "Bank lock" (see "Lock" button) activation.

- **Bank Lock (Lock button):** Click the "Lock" button on the tool bar at the bottom of the Load Flash dialog **window** to set the bank status as described under "Status" above. As stated above, Swap activation does not determine bank status and Reset will be followed by automatic bank replacement.
- **Reset (Reset button)**: Click the "**Reset**" button on the tool bar at the bottom of the Load Flash dialog window to reset the destination card (a single reset action from the CPU in the RPU/RPC will cause both to reset). This function can be used to replace banks that were not subject to LOCKing.

Table A-6: Operations – Sub Menu Items

Click	To
Load Flash (continued)	Software replacement to RPU/RPC: Select the appropriate replacement file (*.rlm) in the "Open Dialog Window" (see Figure A-14). The procedure for software replacement under FRL is not protected against failure that can lead to deletion of all FLASH information and card "crash" conditions, therefore the procedure should be carried out as detailed below. Before commencing loading, verify that the card is stable and is not in a WATCH DOG loop. Proceed as follows: 1. **Clear** - Clear memory 2. **File to load** - File selection for loading 3. **Start load** - Load software 4. **Enable** - Enable software 5. **Swap** - Bank replacement, wait for RESET to complete 6. **Lock** - Bank lock
Terminal Emulator	Display the appropriate RPU A (or B) "Terminal Emulator" (**accessible to senior technical personnel only**): **Figure A-15: Terminal Emulation of RPU/RPC** Proceed interactively by selecting the required menu item and responding to on-screen commands accordingly.

Table A-6: Operations – Sub Menu Items	
Click	**To**
Terminate RPU/RPC Maint. Calls	Terminate RPU/RPC maintenance calls.

Port Selection

In the SU View window (or DNI View and sometimes RPU/RPC View) highlight a port (e.g. Port 1) and click the right hand mouse button to display the "Maintenance Call" box:

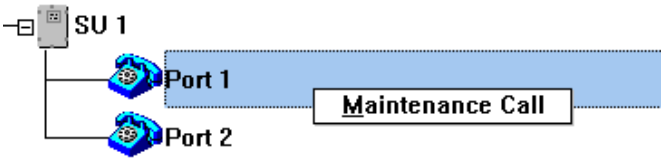


Figure A-16: Maintenance Call Box

Click the Maintenance Call box to display the active configuration:

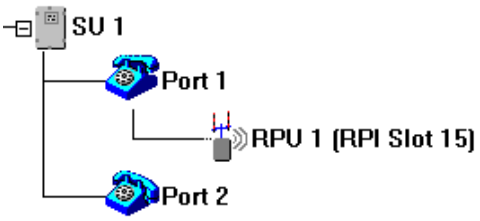


Figure A-17: Active Configuration Display

To terminate the Maintenance Call, click with the right hand mouse button on the relevant Port to display the "Terminate Maint. Call" box. Click the box to terminate the Call and return to the previous configuration.

SU Selection

Click an SU to highlight the node and click "Operations" in the Main Menu bar to display the Operations sub menu items. Alternatively, click the highlighted bar with the right hand mouse button to display the Operations sub menu:

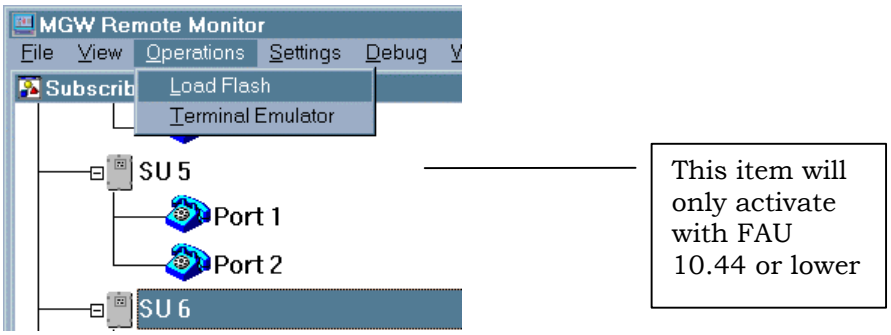


Figure A-18: Operations Sub Menu

Table A-7: Operations Sub Menu

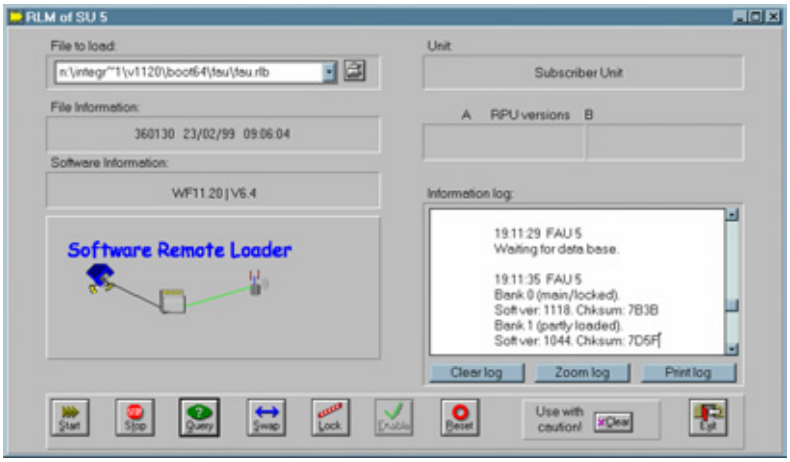
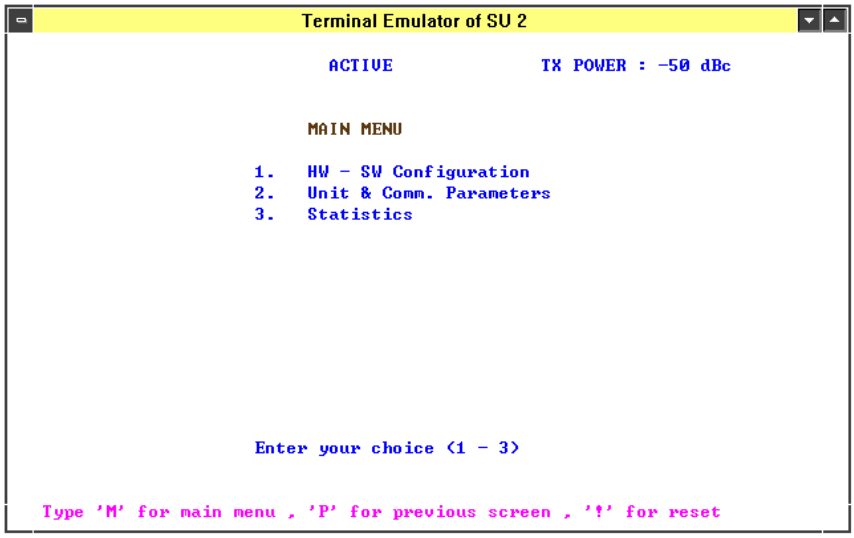
Click	To
Load Flash	Display the Load Flash dialog window :  **Figure A-19: RLM of SU (Load Flash Dialog Window)** 1. Verify that the file name appearing in the "File to load:" drop down box is the correct file and identical to that in RPU B, otherwise the subsequent operation is not enabled! 2. Click the "Start" button in the button bar at the bottom of the screen and wait for approximately 30 minutes for the operation to complete and for the message: "File loaded successfully" to appear in the Information log window. 3. Press the "Swap" button in the button bar to change the banks. 4. Press the "Lock" button to lock the bank.

Table A-7: Operations Sub Menu

Click	To
Terminal Emulator (This item will only activate with FAU 10.44 or lower, see *SU Selection*)	Display the appropriate SU "Terminal Emulator" (**accessible to senior technical personnel only**):  **Figure A-20: Terminal Emulation of SU** Proceed interactively by selecting the required menu item and responding to on-screen commands accordingly.

RPCU Selection

Click the RPCU element to highlight and click the right-hand mouse button on the RPCU bar to display the "Terminate All the Maint. Calls box":

Figure A-21: Terminate All the Maint. Calls Box

Click the box to terminate all maintenance calls.

Exit From RMON

Click "File" in the Main Menu Bar to access the "Exit Alt+F4" item. Click "Exit Alt+F4" to terminate the RMON session.

B

Appendix B - CMAP to RPCU Connections

In this Appendix

- General, on page B-2
- Connections Instructions, on page B-3
- Modem Set-Up, on page B-5

General

The MGW system designated tool for Remote Management & Control is the SuperOfficeMap - SMAP8000. Refer to SMAP8000 Installation and Operation Manual (P/N 8638-71407-00) for detailed information on the SuperOfficeMap Management tool.

CMAP8000 provides local access to a single RPCU. A limited capability remote dial-up connection via modem was added, to provide an "immediate" connection to an RPCU from a remote location.

This appendix describes how to physically connect the PC that runs the CMAP8000 & RMON to the MGW RPCU, either directly (locally), or remotely via a Dial-up modem.

The market encompasses a large variety of modem types, each type requiring different mode of set-up and initialization techniques. This appendix, being part of a general description of the installation and operation instructions for the CMAP8000, describes the set-up and initialization process only for a specific modem, were the connection was tested by Alvarion: **3Com** (formerly **U.S. Robotics) Model 5686**.

Alvarion P/N for the Modem is 8699-84003-00.

Connections Instructions

CMAP to RPCU - Direct

Connect the PC running the CMAP program to the RPCU connector J15, using Cable #1. (See Appendix C), as shown in Figure B-1.

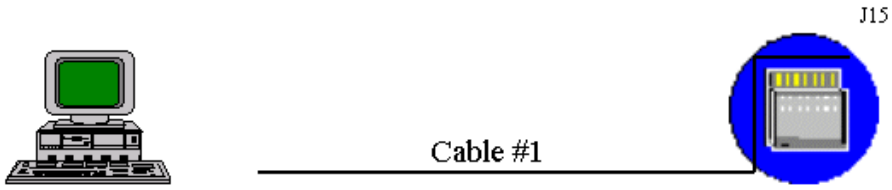


Figure B-1:CMAP to RPCU J15 Connection

RMON to RPCU - Direct

Connect the PC with the RMON program to the RPCU connector J4, using Cable #2. (See Appendix C), as shown in Figure B-2.

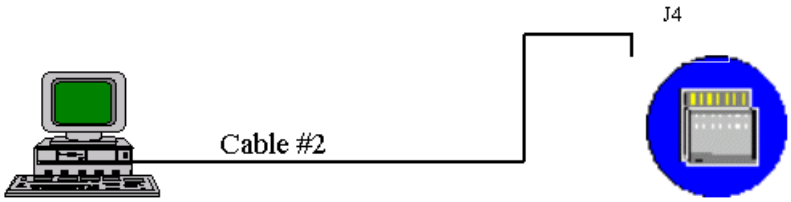


Figure B-2: RMON to RPCU J4 Connection

CMAP to RPCU - Via Modem

1. Connect the PC with the CMAP program to the modem on the remote side, using Cable #4 (supplied by the Modem Vendor).
2. On the local side (RPCU site), connect the Modem to the Adapter Cable (Cable #3 - see Appendix C), and the Adapter Cable to the RPCU connector J15 via Cable #1 (see Appendix C), as shown below:

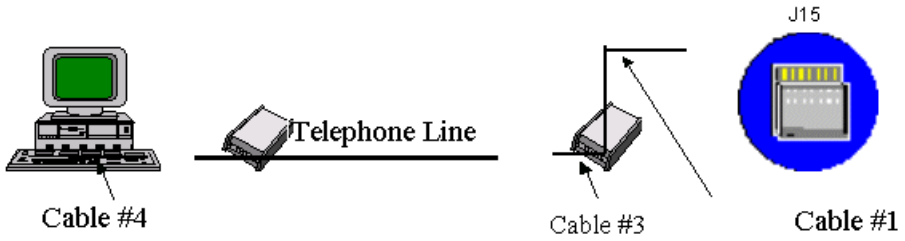


Figure B-3: CMAP to RPCU Via Modem Connection

RMON to RPCU - Via Modem

1. On the remote side, connect the PC with the RMON program to the modem using Cable #4 (supplied by the Modem Vendor).
2. On the Local side (RPCU site) connect the modem to the adapter cable (Cable #3 - see App. C), then to the RPCU connector J4, using Cable #2 (see App. C):

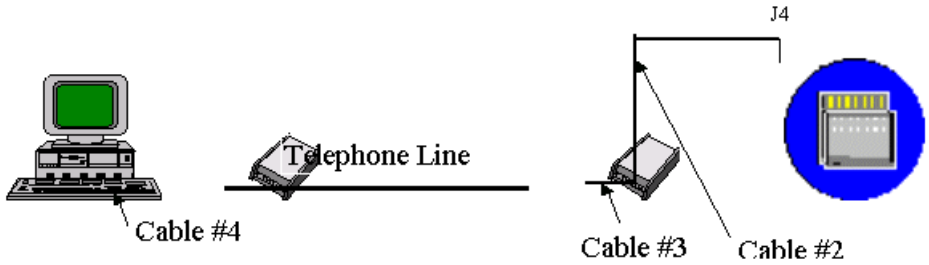


Figure B-4: RMON to RPCU Via Modem Connection

Modem Set-Up

Set-up Local Modem (Located Near the RPCU)

To set-up the Modem:

1. Connect a PC directly to the modem using Cable #4 (supplied by the Modem Vendor):

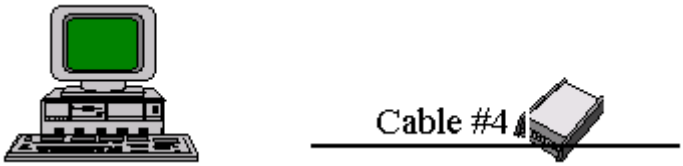


Figure B-5: Modem Connection Direct to PC

2. Utilizing a Terminal Emulation program (such as MS-Windows Hyper Terminal), send the following AT commands:

AT&F&w

ATZ0

Where:

F= Factory default

W = Save information to the modem.

3. After setting up the modem, remove the modem Cable #4 (PC to Modem) and connect the CMAP or RMON Cable #1 or #2 (respectively) via the adapter Cable #3 (as shown in Figure B-1 and Figure B-2).

NOTE

The RPCU (NMI) sends the required initialization string: AT&D0S0=1&W to the modem every 30 minutes.

Set-up Remote Modem (Located Next to the Remote PC)

CMAP

Set CMAP to Modem Operation and click the Telephone icon.

RMON

1. Activate Win95 Hyper Terminal
2. Create a new name and press Enter.
3. "Connect using" by choosing "Direct to Com X" where X is the "#" of the comm. port connected to the modem.
4. Press Enter on the next screen and select:
   - Bits per second 9600
   - 8 bit
   - No parity
   - 1 stop bit
   - No flow control
5. Press "AT" and Enter nd verify getting "OK".
6. Send the following string to the modem:
   - AT&F&C1&D0&N6&W
   - ATZ0

   Where:

   N6 selects baud rate 9600
7. Initiate a call to the modem located at the RPCU by typing:

   "**ATDTxxxxxxxx"** and then [Enter],

   where:

   Where tone dialing is not supported, but only pulse dialing, dial:

   ATDPxxxxxxxx....

   where:

   xxxxxxxx = destination telephone number of local modem

8. Wait for the “CONNECT” message to appear on your screen and exit the Hyper Terminal program.
9. Make sure that the LED CD (Carrier Detect) is still on.
10. Run RMON, defining the following:
    - Ignore xon/xoff
    - Ignore CTS/RTS
    - Baud rate 9600
    - 8 bit
    - No parity
    - Comm. port

C

Appendix C - Interconnecting Cables

In This Appendix

- Lisf of Cables, on page C-2
- Cable Pin Assignment, on pace C-3

List of Cables

Table C-1: List of Cables

Cable No.	Cable Description	Cable P/N
#1	CMAP to RPCU - Direct	8638-80002-16
#2	RMON to RPCU - Direct	8626-93700-00
#3	RPCU to Modem Adapter Cable	8638-80817-00
#4	PC to Modem	(*)

(*) - Cable supplied by Modem Vendor

Cable Pin assignment

Cable # 1

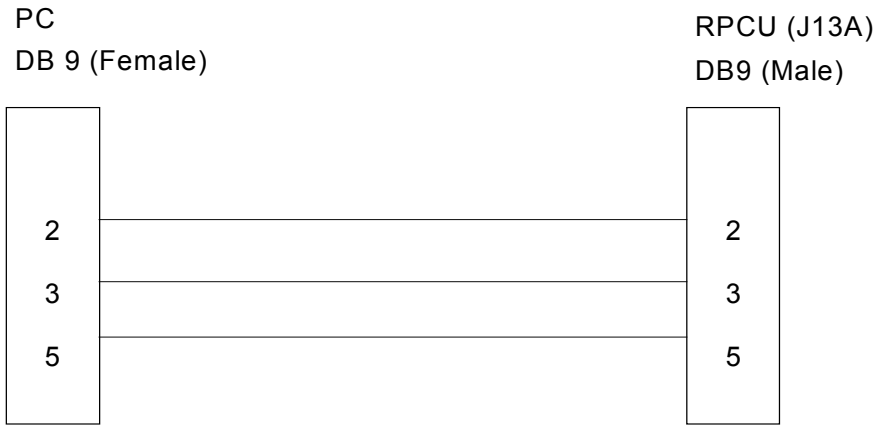


Figure C-1: Cable #1

Cable # 2

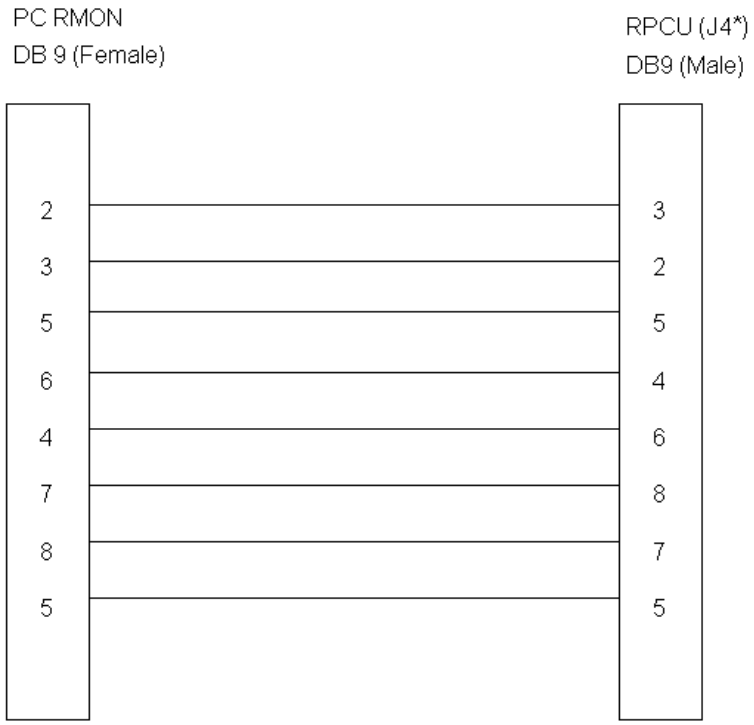


Figure C-2: Cable #2

* J5 in the case of MPM redundancy

Cable # 3

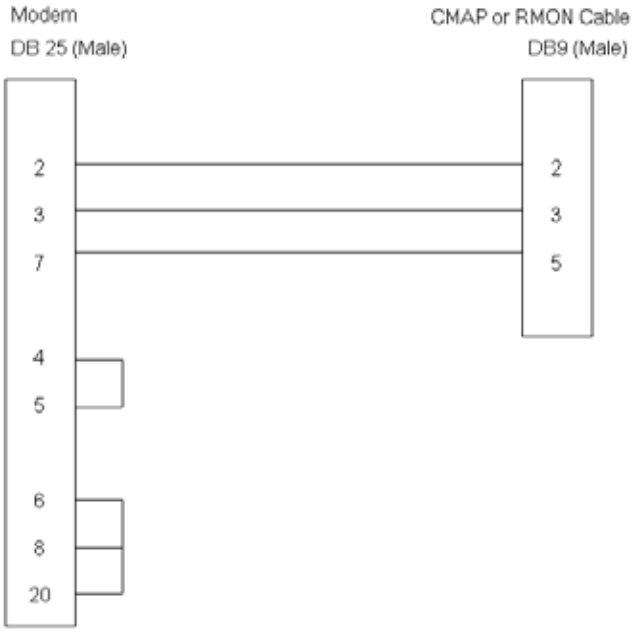


Figure C-3: Cable #3

D

Appendix D - Time Diversity

In This Appendix

- Introduction, on page D-2
- Feature Activation, on page D-3

Introduction

The Time Diversity feature enables the MGW system to allocate two time slots on the radio link, in each frequency hop, to improve the quality of the telephone connection. In the first time slot, the current voice sample is transmitted, while in the second time slot, the previous sample, which was already transmitted in the previous frequency hop, is retransmitted.

If there is interference on, or fading of the radio channel at a given frequency, it is most likely that the adjacent channel, using a much higher or lower frequency, is clear. Eventually, the required information is received and better quality connection is ensured.

The Time Diversity feature is part of the general MGW software.

Description

The Time Diversity feature is implemented in all MGW software versions. The latest version is an improved and more flexible feature.

Every subscriber can get one of 15 priority levels, ranging from “1” to “F”, which directs the system how to handle his call, once it is established.

Time Diversity in the Current MGW Version

A call connecting a subscriber with priority given to using the Time Diversity feature, can obtain a second time slot required for this feature, only when establishing the call.

If there are two vacant time slots, the call request receives the second required time slot. After allocation of the time slots, the RPU/RPC initiates time slot balance calculation and if there are calls using Time Diversity, the RPU/RPC preempts the use of a second time slot for the lowest priority level call.

The highest priority level call remains “F”, but the difference between this version and previous ones is that such a call retains its second time slot, even if all eight RPU/RPC time slots are occupied. Moreover, there can be four “F” priority level calls, all retaining the second time slot, meaning four simultaneous calls!

Feature Activation

In order to enable a subscriber to have a second time slot in his calls, the operator should use the RMON tool (see Appendix A). The following activities should be carried out.

RPU/RPC Related Actions

Using the RMON tool, select the View -> RPU/RPC View option from the Main Menu toolbar.

Select the active RPU/RPC where the Time Diversity is to be activated and select the Setting option from the Main Menu toolbar.

Click the “Advanced Features” option, type the password and Enter.

At this stage click the right mouse button or select from the Main Menu toolbar the Operation option, Terminal Emulator, RPU-A and type the letter “m.”.

The operator is now in the main RMON menu and should select option 2:

2 > Unit & Comm. Parameters

Next, in option 6 set it to 0 (zero):

6 > Time Diversity (0-Auto, 1-1 slot, 2-2 slots) = 0

where, 0 = enable the feature, 1 = disable feature and 2 = future option.

FAU Related Actions

Using the RMON tool as above, except in the View option select the DNI View or the SU View and select the active FAU. The operator is now in the HHT mode, and can select option 2 from the main menu:

2 > Unit & Comm. Parameters

Next, option 5 should be set to the desirable priority level:

5 > TIME DIVERSITY LEVEL (0 to F).

The field contains two characters: the right character is used when FAU-1 is installed or for SU# (port 1) when FAU-2 is installed. The left character is used for SU# (port 2) in FAU-2.

Type

0 - disable the feature;

1÷E- enable any priority level for the feature;

F - F priority level for Time Diversity;

E

Appendix E - Performance & Traffic Monitoring

In This Appendix

- Performance Monitoring, on page E-2
- Traffic Monitoring, on page E-5

Performance Monitoring

Session Parameters

WER

1. *U.L. LES* - the ratio of Up Link Low Errored Seconds (1 to 5 errors/second) to the total accumulated session time.
2. *U.L. MES* - the ratio of Up Link Medium Errored Seconds (6 to 15 errors/second) to the total session time.
3. *U.L. SES* - the ratio of Up Link Severely Errored Seconds (more than 16 errors/second) to the total accumulated session time. This parameter is an indication of the burst nature of the errors.

NOTE

Error free seconds ratio can be achieved by subtracting the sum of these three parameters from 100%.

4. *U.L. Bgnd* - the ratio of Up Link Errored Word to all words in the accumulated period, discarding severely errored periods). This parameter is an indication of the general nature of the air link, when there are no bursts of noise.
5. *D.L. LES* - the ratio of Down Link Low Errored Seconds (1 to 5 errors/second) to the total accumulated session time.
6. *D.L. MES* - the ratio of Down Link Medium Errored Seconds (6 to 15 errors/second) to the total accumulated session time.
7. *D.L. SES* - the ratio of Down Link Severely Errored Seconds (more than 16 errors/second) to the total accumulated session time. This parameter is an indication of the burst nature of the errors.

NOTE

Error free seconds ratio can be achieved by subtracting the sum of these three parameters from 100%.

8. *D.L. Bgnd* - the ratio of Down Link Errored Word to all words in the accumulated period, discarding severely errored periods). This parameter is an indication of the general nature of the air link, when there are no bursts of noise.
9. *Time Hour* - presents the total accumulated session time (hours) of the subscriber over the relevant time range. This parameter is helpful as an indication of the traffic over the air link.

Session Time Diversity

1. *Requested TD* - the *ratio* of seconds when the subscriber requested Time Diversity for his call to the total accumulated session time.
2. *Activated TD* - the ratio of seconds of calls when Time Diversity was actually activated. Busy air link situation may be inferred from this reports when the Activated TD column displays lower values compared to the Requested TD column.

Radio Signal Strength

1. *D.L. Median* - the average Down Link RSS at the FAU end.
2. *U.L. Ant #1 Median* - the Up Link RSS at the RPU/RPC Antenna #1.
3. *U.L. Ant #2 Median* - the Up Link RSS at the RPU/RPC Antenna #2.

Global parameters

Spectrum Analysis

This report displays the spectrum analysis of a specific RPU/RPC or a specific sector or for all RPU/RPCs of an RPCU, along a time interval. The measurements are carried out for frequencies from the Frequency Sequence of that RPCU. The disturbed frequencies are displayed in an ascending order.

1. *Bgnd Noise* disturbed frequencies are those in which a relatively high background noise is measured (in terms of RSS), at the RPU/RPC side. The Background Noise is measured in every unoccupied time slot. The noise measurements are averaged and attributed to the frequency of that hop. During the hour period, the measurements are compared to the average and a higher received signal is defined as a disturbance (at the same frequency). Up to eight highest disturbed frequencies are reported by the RPU/RPC per hour. The CMAP report parameter is the percentage of disturbance appearance of the specific frequency out of total time.

2. *UL WER* disturbed frequencies are those in which a relatively high WER is measured at the RPU/RPC side, during air links sessions. The main cause of WER is a relatively high background noise and disturbing frequencies. The measurements are carried out for frequencies from the Frequency Sequence of that RPU/RPC. Up to eight highest WER disturbed frequencies, which have passed a threshold criteria, are reported by the RPU/RPC. The CMAP report parameter is the percentage of disturbance appearance in the specific Up Link Frequencies, out of the total time.

3. *DL WER* disturbed frequencies are those in which a relatively high WER is measured at the SU side, during air links sessions. These frequencies are determined in two phases. First - all SUs involved in calls report the DL WER disturbed frequencies to the RPU/RPC. Second - the RPU/RPC creates a summarized report of up to eight highest WER disturbed frequencies, which have passed a threshold criterion - in the DL direction. The CMAP report parameter is the percentage of disturbance appearance in the specific Down Link Frequencies, out of the total time.

Antennae Diversity

1. *Ant Div. Gain (dB)* is the performance gain achieved by using Antennae Diversity, compared to using a single antenna.

Global Time Diversity

1. *Requested TD* is the ratio of requested Time Diversity for subscribers served by the reported RPU/RPC to the total active time of the air link. This parameter is not always 100% since the feature was not necessarily assigned to all subscribers.

2. *Activated TD* is the ratio of the time when the feature was activated compared to the total active time of the air link.

Traffic Monitoring

Traffic Volume

Traffic volume expresses the total traffic in Erlangs, during the data colectiion period. This parameter enables the operator to predict the growth rate of the system and thereby optimize system planning.

The report is available for SU, Sector (per each RPU/RPC in the sector selected and the sector average), Network interface and RPCU entities.

A report example is shown in Figure E-1. The report shows the volume of traffic for each RPU/RPC in a selected sector as well as the sectorial average per RPU/RPC: the total traffic in the sector for the given time interval, divided by the number of RPU/RPCs in that sector. In the first column, the date and the time intervals for the displayed data are listed.

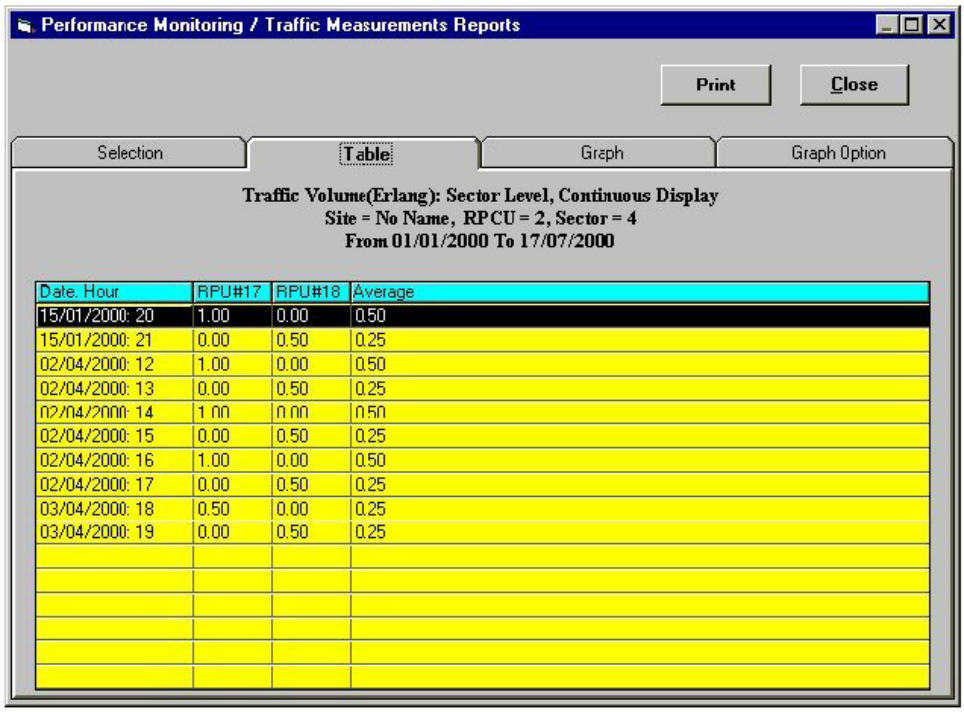


Figure E-1: Traffic Volume Report: Sector Level, Continuous Display

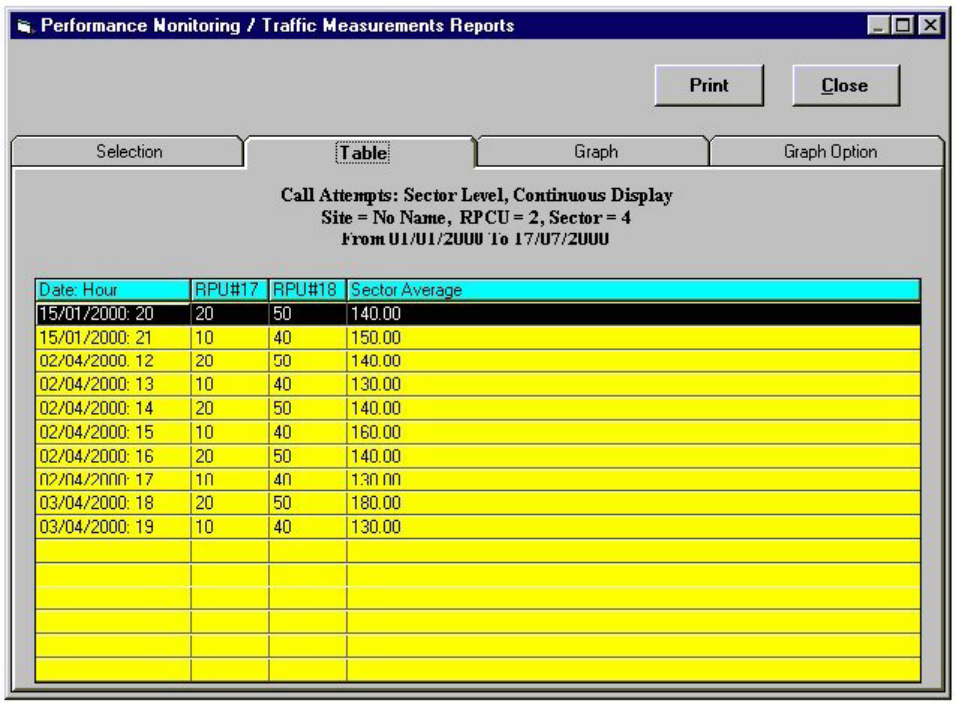
Operators are advised to verify that the traffic volume of each RPU/RPC is similar to the average. In the event of dissimilarity, a check should be made to determine if the non-homogeneity of the traffic among co-located RPU/RPCs is reasonable.

Call Attempts

The Call Attempts report shows the sum of all the successful and failed call attempts during the data collection period.

The report is available for Sector (per each RPU/RPC in the sector selected and the sector average per RPU/RPC), Network interface and RPCU entities.

A sector level report is shown in Figure E-2 below:



Date: Hour	RPU#17	RPU#18	Sector Average
15/01/2000: 20	20	50	140.00
15/01/2000: 21	10	40	150.00
02/04/2000: 12	20	50	140.00
02/04/2000: 13	10	40	130.00
02/04/2000: 14	20	50	140.00
02/04/2000: 15	10	40	160.00
02/04/2000: 16	20	50	140.00
02/04/2000: 17	10	40	130.00
03/04/2000: 18	20	50	180.00
03/04/2000: 19	10	40	130.00

Figure E-2: Call Attempts: Sector Level, Continuous Display

NOTE

On the RPU/RPC columns only the successful calls are counted, although on the sector average column all the call attempts are taken into account.

The results for each RPU/RPC should be similar. Furthermore, from the data listed in this report, mainly the daily peak report, operators should verify if the actual Grade of Service (GoS) is similar to the desired one. The actual GoS is determined by the sum of all RPU/RPC results (for a given hour) divided by the number of RPU/RPCs divided by the sector average.

Lost Calls: All Failures

The above report lists the ratio (%) of failed calls out of total call attempts (successful plus failed) count.

The report is available for Sector, Network interface and RPCU entities.

A typical report is shown in Figure E-3. The first column lists the date and time intervals for the displayed data; the second column lists the call failure percentage of total call attempts.

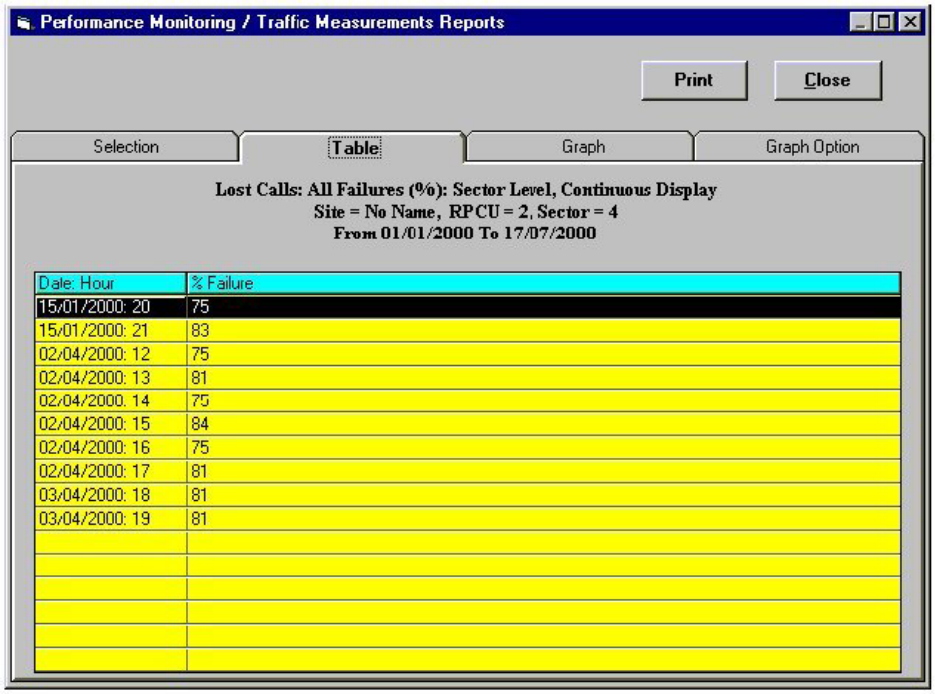


Figure E-3: Lost Calls; All Failures (%): Sector Level, Continuous Display

Lost Calls: Per Failure Type

The above report lists lost calls to carried calls ratio (%) per call failure type.

The report is available for Sector, Network interface and RPCU entities. The sector level report supports 6 failures, while a single failure type only is available for the network interface level. Therefore, as a single type of lost calls is relevant to the network interface level, the presentation of all lost calls types is identical to the total failure count for this report level.

In Figure E-4 the first column of the report lists the date and the time intervals for the displayed data. The remaining columns present a failure type and ratio to carried calls.

Failure types supported are:

A. *Link Drops*: Failures due to poor quality of the air link.

B. *ICall SU Busy*: No TS (Time Slot) available on the active RPU/RPC for incoming call attempts.

C. *ICall Sect. Busy*: No TS available in the sector for incoming call attempts.

D. *OCall Sect. Busy*: No TS available in the sector for outgoing call attempts.

E. *OCall SU Busy*: No TS available in the active RPU/RPC for outgoing call attempts.

F. *PCM Deny*: PCM Call allocation denied.

G. *LE Busy* (Network *Interface* Level): Outgoing call request denied by LE.

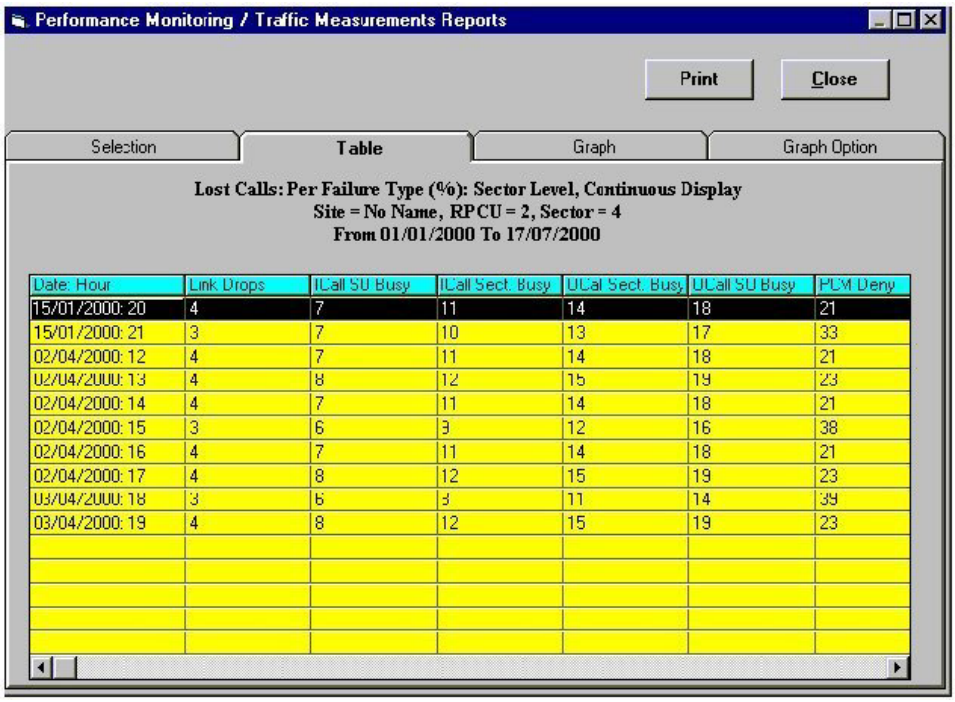

Performance Monitoring / Traffic Measurements Reports
Print
Close
Selection
Table
Graph
Graph Option
Lost Calls: Per Failure Type (%): Sector Level, Continuous Display
Site = No Name, RPCU = 2, Sector = 4
From 01/01/2000 To 17/07/2000
Date: Hour | Link Drops | ICall SU Busy | ICall Sect. Busy | OCal Sect. Busy | OCall SU Busy | PCM Deny
15/01/2000: 20 | 4 | 7 | 11 | 14 | 18 | 21
15/01/2000: 21 | 3 | 7 | 10 | 13 | 17 | 33
02/04/2000: 12 | 4 | 7 | 11 | 14 | 18 | 21
02/04/2000: 13 | 4 | 8 | 12 | 15 | 19 | 23
02/04/2000: 14 | 4 | 7 | 11 | 14 | 18 | 21
02/04/2000: 15 | 3 | 6 | 9 | 12 | 16 | 38
02/04/2000: 16 | 4 | 7 | 11 | 14 | 18 | 21
02/04/2000: 17 | 4 | 8 | 12 | 15 | 19 | 23
03/04/2000: 18 | 3 | 6 | 9 | 11 | 14 | 39
03/04/2000: 19 | 4 | 8 | 12 | 15 | 19 | 23

Figure E-4: Lost Calls Per Failure Type: Sector Level, Continuous Display

Average Traffic Intensity

This report is sector oriented and presents the occupancy of the sector expressed in Erlangs (see Figure E-5).

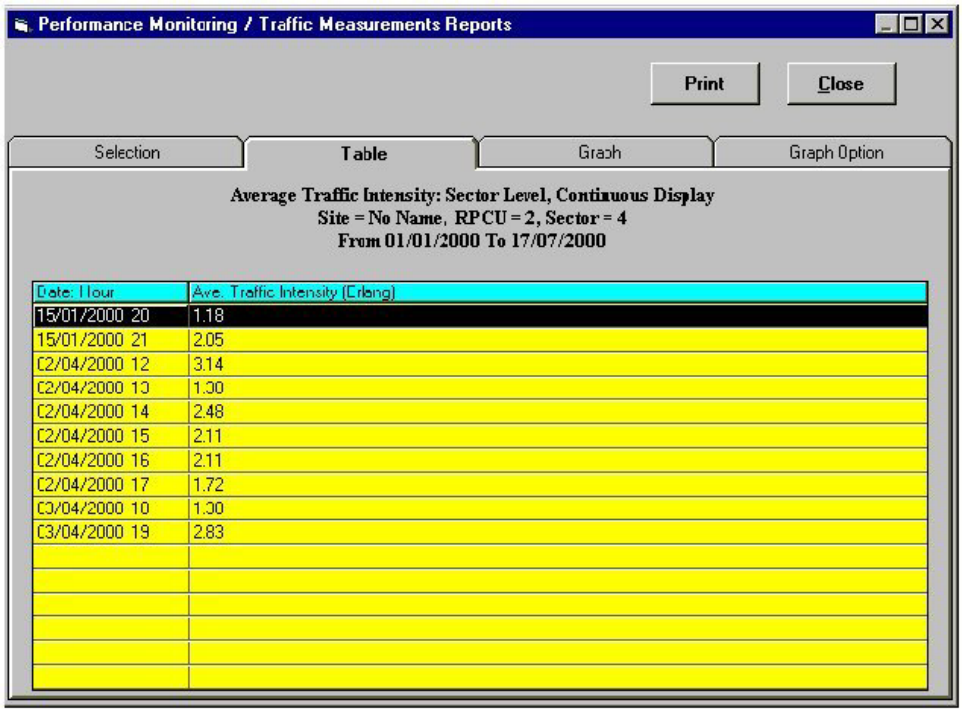


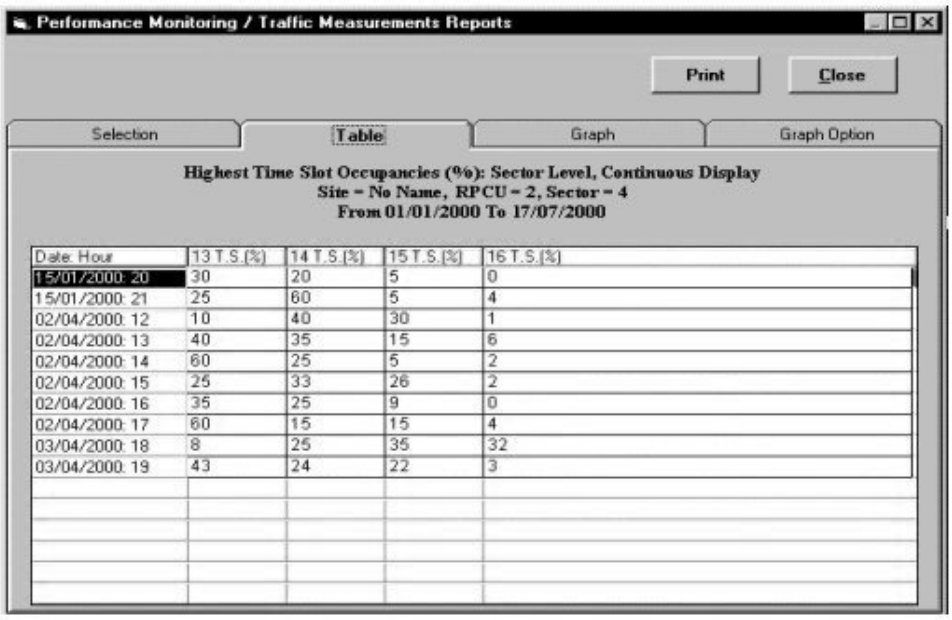
Figure E-5: Average Traffic Intensity: Sector Level, Continuous Display

The daily peak presentation of this report is used to determine the given GoS. The given GoS could be determined by referring to the ErlangB table, according to the traffic data displayed in this report and available TS's (8 per each RPU/RPC) in the sector.

Highest Time Slot Occupancies

This report is a powerful tool for optimizing sector resources. It enables operators to analyze the efficiency of any sector. The report details the highest capacity usage of the sector, by means of the "last four time slot" occupancy. This data is expressed as the ratio of the time each of these slots was occupied, to the data collection period time.

The report shown in Figure E-5 refers to a sector with 2 RPU/RPCs, namely 16 TS.



Date: Hour	13 T.S.(%)	14 T.S.(%)	15 T.S.(%)	16 T.S.(%)
15/01/2000: 20	30	20	5	0
15/01/2000: 21	25	60	5	4
02/04/2000: 12	10	40	30	1
02/04/2000: 13	40	35	15	6
02/04/2000: 14	60	25	5	2
02/04/2000: 15	25	33	26	2
02/04/2000: 16	35	25	9	0
02/04/2000: 17	60	15	15	4
03/04/2000: 18	8	25	35	32
03/04/2000: 19	43	24	22	3

Figure E-6: Highest Time Slot Occupancies Report

The first column lists the date and the time interval for the displayed data. The second column lists the percentage of the time 13 TS out of 16 TS were occupied for the hours listed in the first column. The third column, like the second one, lists the percentage of the time14 TS out of 16 TS were occupied, etc.

Sector resources upgrade is based on the results of this report.

F

Appendix F - Automatic Software Download

In This Appendix

- Introduction, on page F-2
- ADSL Operation, on page F-4

Introduction

The RPU/RPC and the FAU remote monitoring and provisioning features of the RMON (see Appendix A) are integrated into the xMAP application. The RMON function is limited to remote downloading of software to the RPU/RPC and the FAU. The Automatic Software DownLoad (ASDL) utility replaces the RMON by upgrading and improving operation.

The main features of the new ASDL are:

- Partially automated download, and
- Broadcasting capability to several units.

The ASDL utility simultaneously downloads the software to deployed RPU/RPCs (RPU-A and RPU-B) as well as FAU.

The ASDL enables the operator to:

- Query the target software banks status;
- Download new software into secondary bank;
- Swap and lock active banks.

When the target is an FAU, the software is first downloaded into all RPU-B banks as a pre-load phase. The software us then download into the FAUs.

IMPORTANT

The user must differentiate between FAU and FAU-B prior to software download due to software variations. Thus, The ASDL is applied separately for FAUs and for FAU-B's, using the appropriate software. Verify the FAU type by first highlighting the SU in the SU array screen, then clicking the **Configuration>Version information** menu item to display the corresponding window, in order to check the H/W Type (FAUb-XX or FAU-XX, XX= 1,2,4, 1D, 2D).

TIP

For future installations, allocate selected ranges of SU numbers for FAUb.

The banks of RPU-A and RPU-B are downloaded via the messages channel (no service interruption), while the banks of the FAU are downloaded via the traffic channel (service interruption).

The ASDL downloads software files to MGW Version 2.x.

Figure F-1 below shows the ASDL paths through the involved MGW units:

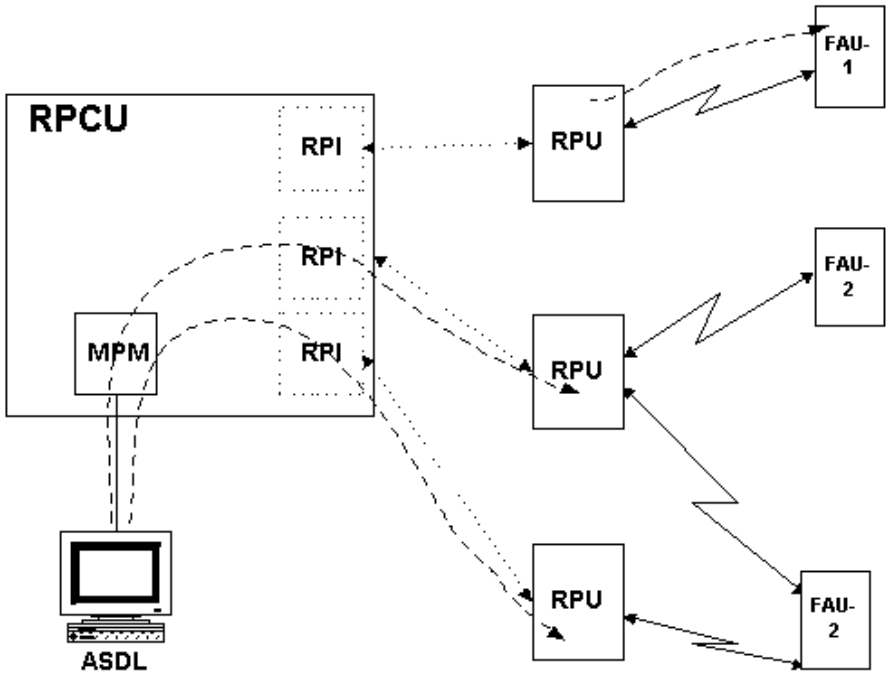


Figure F-1: MGW Units involved in ASDL

The ASDL is connected to the RPCU via the J4 on the connector panel.

ADSL Operation

Getting Started

Double-click the ADSL icon on your Windows desktop to display the ASDL utility opening screen:

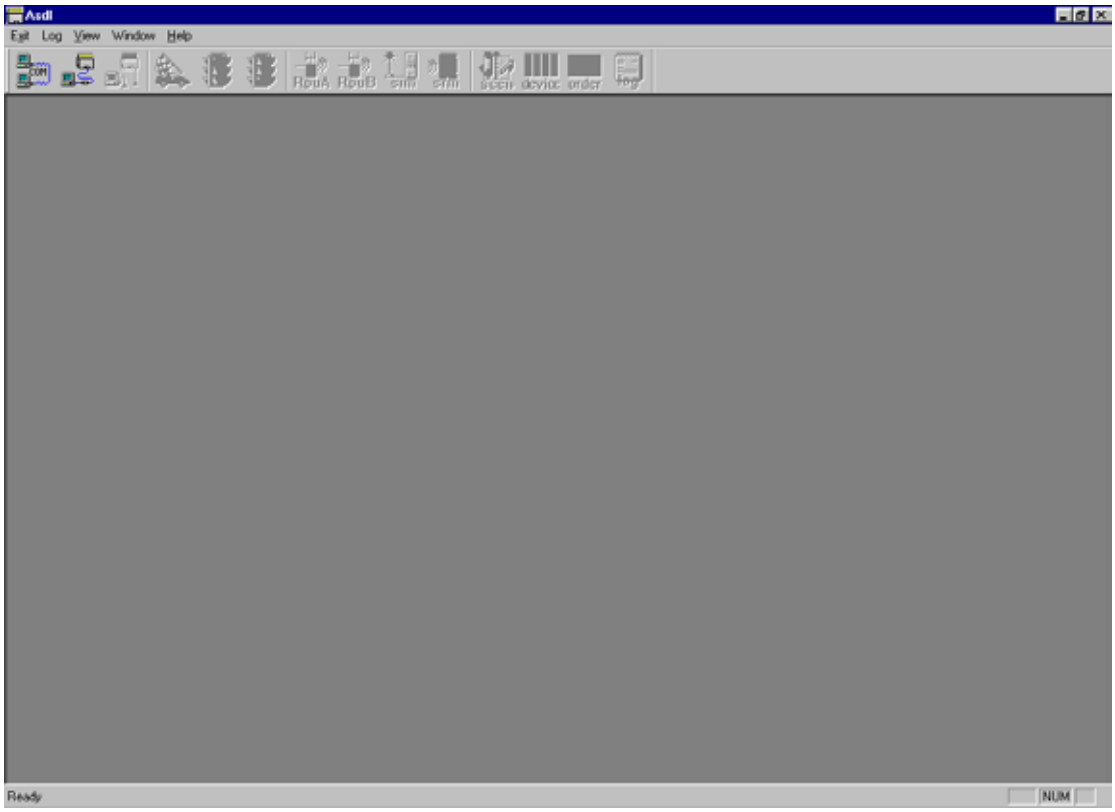


Figure F-2: ASDL Main Screen

The toolbar options are described in Table F-1 below:

Table F-1: Toolbar Button Options

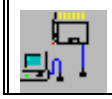
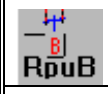
Click	No.	To
	1	Display port settings dialog window
	2	Connect the ASDL utility to the system
	3	Disconnect the ASDL utility from the system

Table F-1: Toolbar Button Options

Click	No.	To
	4	Run the ASDL process
	5	Suspend operation after ASDL is completed for current connected device
	6	Resume operation
	7	Stop after completing the current attempt for all devices
	8	Select RPU-A device
	9	Select RPU-B device
	10	Select SIM card in the FAU
	11	Select the SRM card in the FAU
	12	Display the Scenario (commands) window
	13	Display the Device Configuration window
	14	Display the Scenario Execute Order window
	15	Display the Log messages window
	16	Select About ASDL
	17	Select context-sensitive help

Initially only the toolbar “Port Settings” and “ASDL Connect” icons are enabled.

Port Settings

Before proceeding with ASDL operations, click Toolbar Button No. 1 (see Table F-1) to display the port communication settings dialog window:

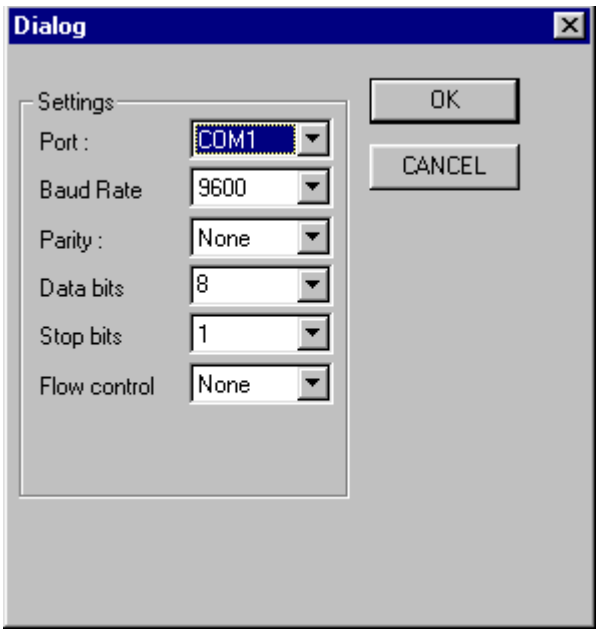


Figure F-3: Port Settings Dialog Window

Select the required communication settings using the respective dropdown list boxes and click the OK button to return to the ASDL main screen.

Connection/Disconnection

Click Toolbar Button No. 2 (see Figure F-1) to connect the ASDL utility to the system and display the ASDL main screen, incorporating Device configuration, Scenario, Scenario execute order and Logs windows:

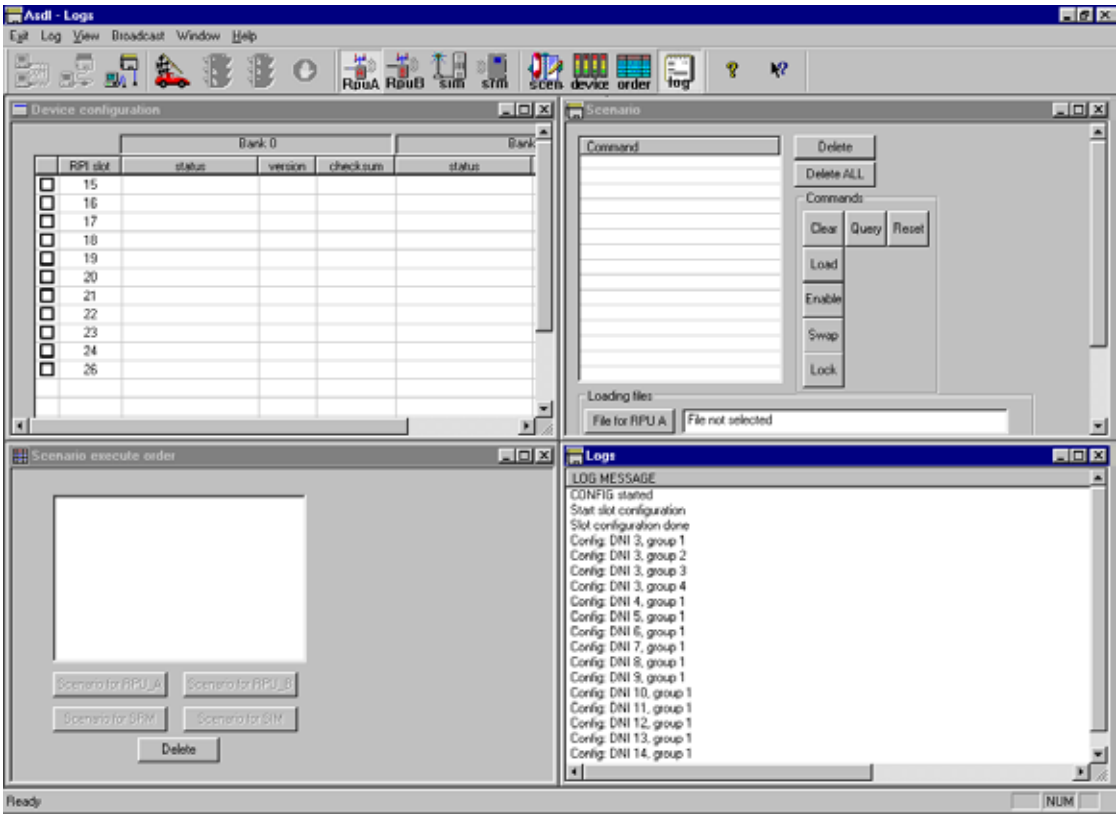


Figure F-4: ASDL Main Screen (Logs Window active)

NOTE

1. The toolbar buttons displaying in gray scale are disabled in this mode.

2. The Window main menu item enables the windows to be viewed in tile or cascade display mode. In general, the displayed windows respond to standard Windows 95/98/NT commands. For more information refer to the Windows on-line Help utility.

Click the Toolbar Button No. 3 (see Figure F-1) to disconnect the ASDL utility from the system.

Device Selection

Select the required device, RPU-A, RPU-B, SIM or SRM, for software downloading by clicking the appropriate toolbar buttons: Nos. 8, 9, 10 or 11 (see Table F-1) respectively.

Click the title bar of the Device Configuration window (see Figure F-4) or click Toolbar Button No. 13 (see Table F-1) to activate the Device Configuration window for the selected device:

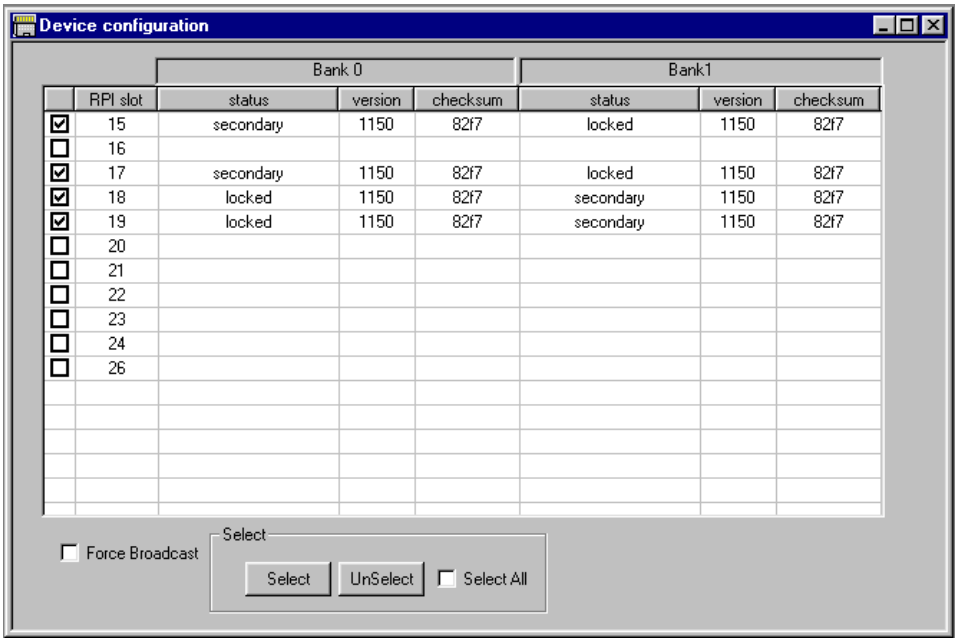


Figure F-5: Device Configuration Window (RPU-A device)

The device configuration window above displays for the RPU-A device.

Select the required RPI slots by checking the checkboxes in the LH column of the table displayed in Figure F-5 above. Selected RPI's can be unselected by clicking the appropriate checkbox. The "Select" pane beneath the table can also be used to select or unselect RPI slots. Check the "Select All" checkbox to select all available RPI slots. Then, click the Select or Unselect button as required.

Check the Force Broadcast checkbox to enable simultaneous ASDL implementation for all selected devices.

IMPORTANT

Use the Force Broadcast Mode hen all RPU/C's are selected ("Select All").
Never use the Force Mode option on an RPU/C sub-group.

Scenario (Commands)

Click the “scen” button (Toolbar Button No. 12, see Figure F-1) to activate the Scenario window:

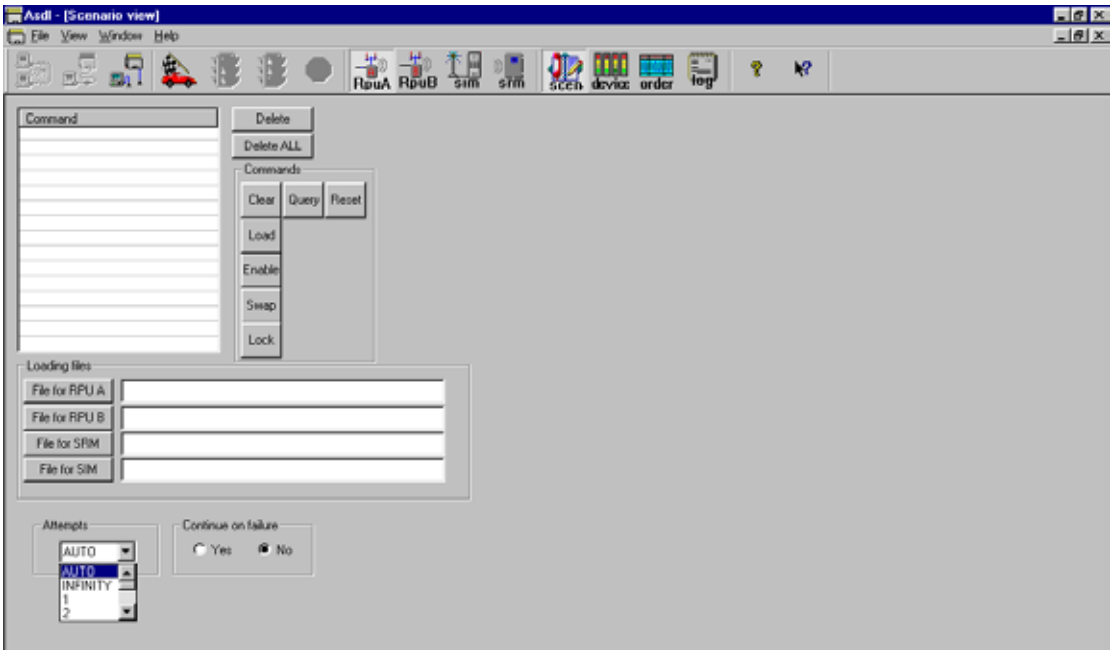


Figure F-6: Scenario Window (RPU-A device) – truncated view

Select commands by clicking the appropriate buttons in the Commands pane. The selected commands are automatically listed in the Command field as shown below:

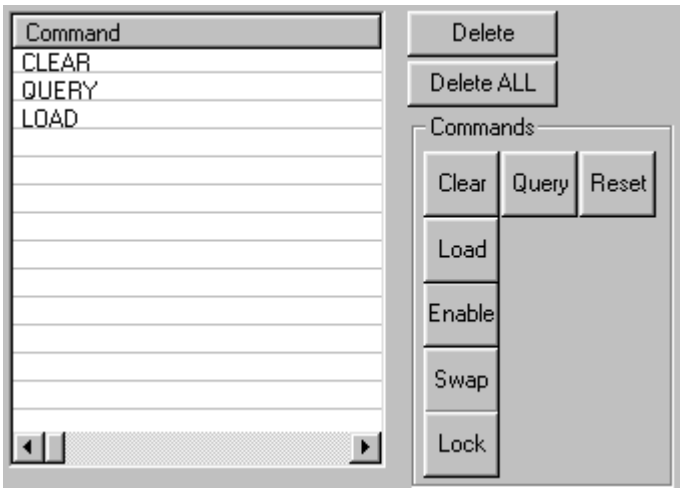


Figure F-7: Command Pane

The Clear, Query and Load commands are selected in the above RPU-A example.

To delete a selected command, highlight the command and click the Delete button.

Click the Delete All button to delete all selected commands.

NOTE

1. There is no need to insert the Query command after each selected command, as the ASDL utility automatically takes care of it.
2. The RPU-B, SRM and SIM command functions are shown below:

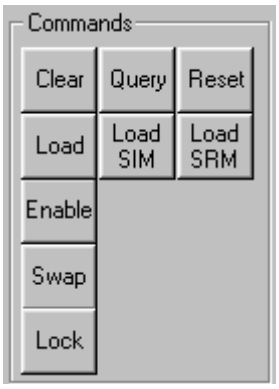


Figure F-8: RPU-B Command Functions

Figure F-9: SRM Command Functions

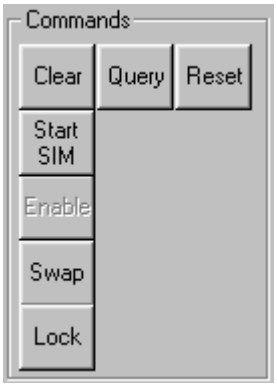


Figure F-10: SIM Command Functions

The required file to be downloaded should be selected and inserted in the Loading files pane. Click the respective button (in the example – "Files for RPU-A") to display the "Open" dialog window:

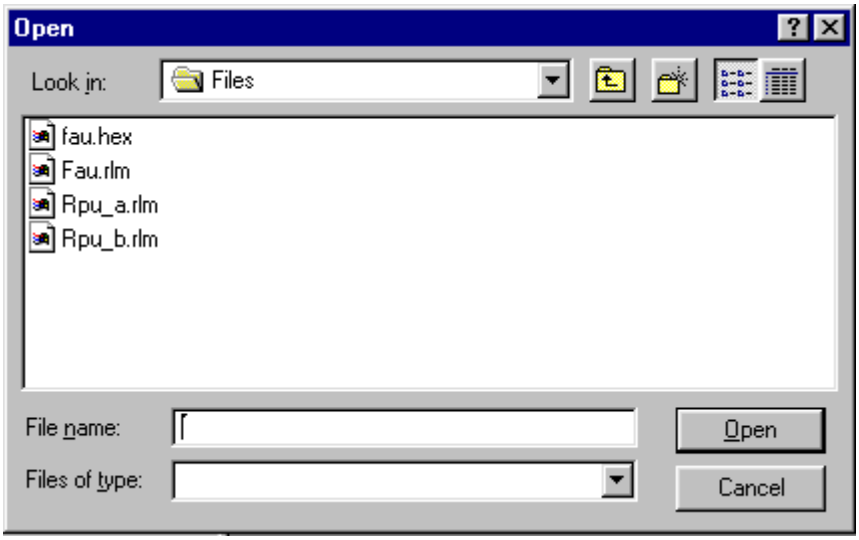


Figure F-11: Open Dialog Window

Select the appropriate file for the given device and click the Open button to return to the Scenario window. The selected file is displayed in the Files for RPU-A field.

At the bottom of the Scenario window are the "Attempts" and "Continue on failure" panes. The "Attempts" pane dropdown list box enables you to select the number of attempts from: AUTO, INFINITY and 1 to 20 attempts. Click the desired Yes/No radio button to define your "continue on failure" requirement.

Proceed either by starting the download process by pressing the Run button (Toolbar Button No. 4, see Table F-1), or define scenarios for other devices. Defined scenarios are displayed in the Scenario Execute Order window.

Scenario Order

Click the Scenario Order button ("order" Toolbar Button No. 14) to display the Scenario Order window:

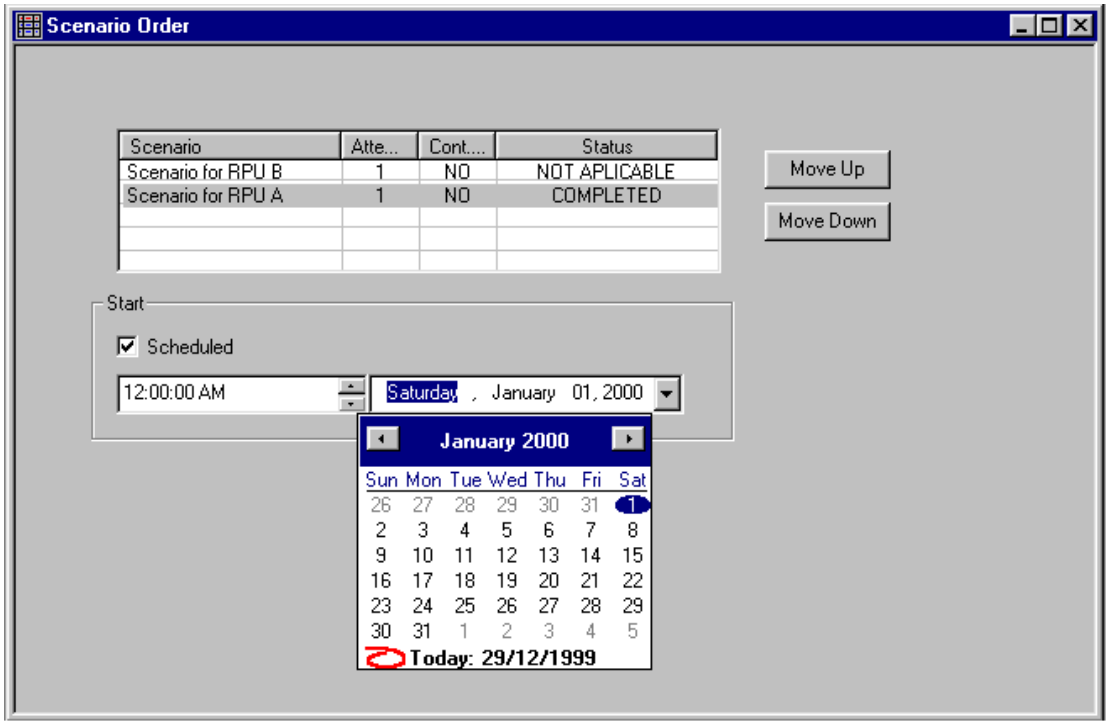


Figure F-12: Scenario Order Window

The defined scenarios are listed according to Attempts (Atte...), Continue on failure (Cont...) and Status.

The default scenario order is: RPU-A, RPU-B, SRM, SIM.

Highlighting a given scenario and clicking the "Move Up" or "Move Down" button, as desired, can revise the default order.

The ASDL procedure is defaulted to start immediately the "Run" operation is activated. The Start pane (see Figure F-12) allows you to schedule the start operation. If you wish to schedule the Start operation, check the "Scheduled" checkbox and select the required time and date for each given scenario.

The Logs Window updates ASDL processing and receives messages according to rate of progress (see Figure F-4).

NOTE

During the "Run" process the Scenario and Device configuration windows are disabled.

During the Run process, the Suspend and Stop commands (Toolbar Buttons 5 and 7 respectively) are enabled. If you elect to activate the Suspend command, the ASDL utility displays the following message:

SUSPEND Mode!!!! Press Resume to Continue

When the Run process is complete, the ASDL utility displays a "Report Request" dialog window, stating:

"Generate report? Yes/No"

Select "Yes," to display a "Save As" dialog window. Select a folder and type in the desired filename where indicated (this is a standard Windows procedure).

Click the Save button to save the file with .TXT extension and close the dialog window.

NOTE

File extensions are predefined for the ASDL utility and users are only required to define the filename. Invalid file extensions are not recognized by the ASDL utility.

Locate the file, using any file management system (e.g. MS Windows Explorer) and open the file to obtain details of the relevant load sequence.

After scenario completion, the Device Configuration window (Figure F-5) displays all the information consequent on the ASDL process.

Logs

Click the Log button to display the Log pane:

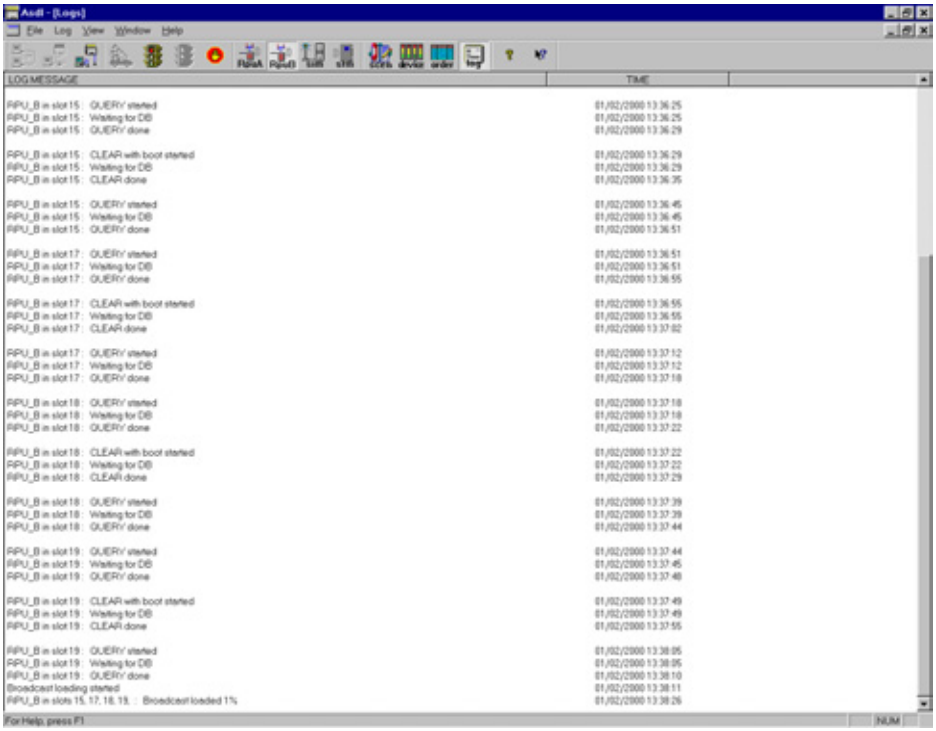


Figure F-13: Log Pane

The execution of each command of the download process and corresponding result is shown in Figure F-13.

During downloading, progress of the process can be viewed on the Device screen:

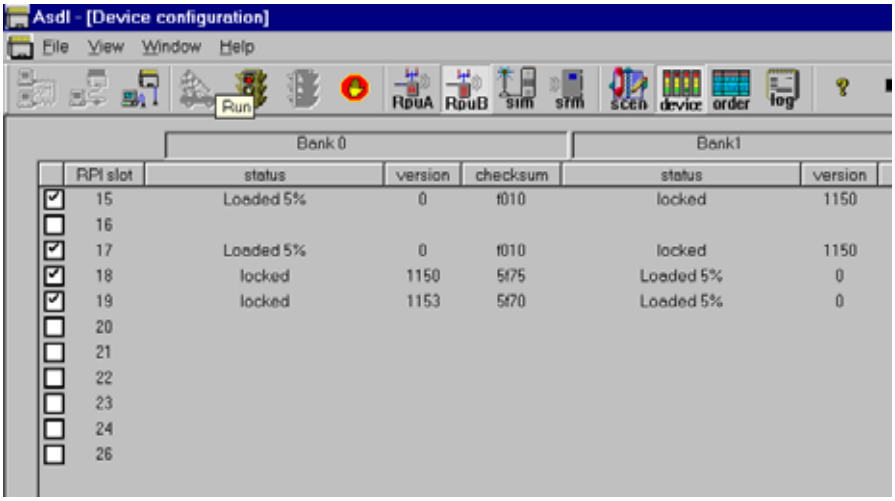


Figure F-14: Device: Downloading Process Window

After all processes have been completed a Report Screen will automatically pop-up, allowing the operator to save the Process Report to as a *.txt file.

All completed scenarios can optionally be removed:

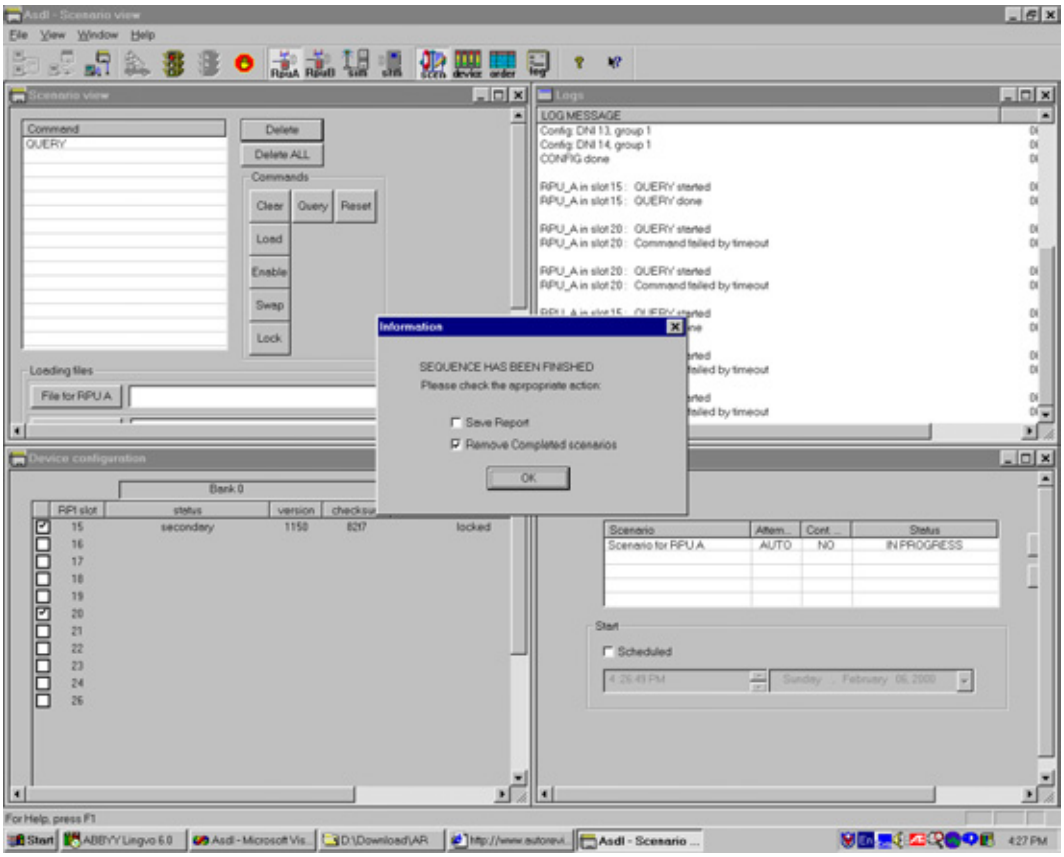


Figure F-15: Report Saving Window

The **Log** file is saved in such a format (*.log), that it can be opened by MS-Excel, and be further processed as a spreadsheet/database file.

Selected Main Menu Items

Click the **Log>Save** menu item at any time, with the Logs window active, during ASDL operation to save the Logs window content. A “Save As” dialog window displays, enabling a *.LOG file to be saved.

Click the **Log>Clear** menu item to clear window messages.

Click **View>Selected Devices** to display only selected slots on Device Configuration window.

Click the **File>Open Scenario...>Part** menu item to open a scenario for the active device only.

Click the **File>Open Scenario...>All** menu item to open a scenario for all four devices.

Click the **File>Save Scenario...>Part** menu item to save a scenario for the active device only.

Click the **File>Save Scenario...>All** menu item to save a scenario for all four devices.

Click the **File>Load Configuration** menu item to load previously defined device configurations.

Click the **File>Save Configuration** menu item to save the current device configuration.

NOTE

User intervention in the system will disable loading or saving operations.

Click File>Exit to exit the ASDL utility.

When exiting, the system checks for unsaved changes to the log file. If the check proves positive, the ASDL utility will display the following dialog window:

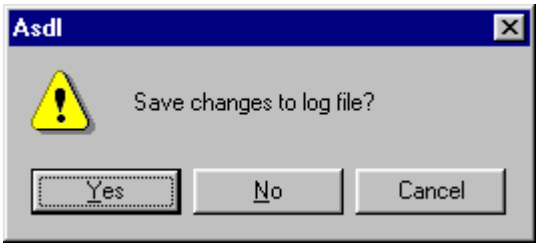


Figure F-16: Save Changes To File Dialog Window

Click the Cancel button to return to the ASDL main screen.

Click the Yes button if you wish to save changes to the log file. The Save As dialog window will display enabling you to save as desired.

If you do not wish to save changes to file, then click the No button to display the following dialog window:

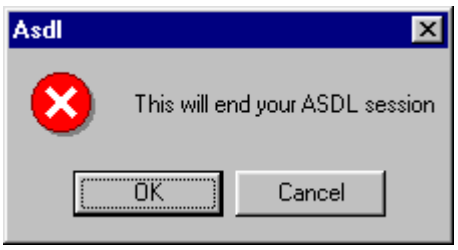


Figure F-17: This Will End Your ASDl Session Dialog Window

Click the Cancel button to return to the ASDL main screen.

Click the OK button to end your ASDL session.

G

Appendix G - Convert Utility Ver. 1.05

In This Appendix

- Introduction, on page G-2
- Implementation, on page G-3

Introduction

The CMAP8000 Convert utility is used to upgrade an existing V5.2 single E1-based MGW system to a multi-E1 based MGW system. The conversion entails remapping connection assignments of CO (Central Office) subscribers from the different E1's of the V5.2 single Mode, to the E1 bundle in the multi E1 Mode. Essentially, a current, backed-up (BCK) MGW configuration file is converted to the required Multi-E1 configuration.

Description

The convert utility is used when upgrading the MGW system to version 2.3, using an existing MGW ver. 2.2/2.1 database. The convert utility reformats databases of versions 2.1 or 2.2 to version 2.3 format.

Upgrade of V5.2 single mode E1 links to a V5.2 Multi E1 links also requires re-provisioning of the subscribers connection to the network, namely it requires to release the association to a specific E1 V5.2 interface and to reassign it the Multi E1 / V5.2 interface. The subscribers will not be anymore connected to a specific E1 port but to a bundle of E1 links composing the Multi E1 V5.2 interface. A consistent process should be applied on the CO to coordinate the L3 addresses.

The convert utility described here reassigns ports of V5.2 single mode E1, initially used in any MGW system, to new logical ports of V5.2 Multi E1 links.

Implementation

Initial Steps

Install the convert utility ver 1.05. it is recommended to install it amongst Cmap files, namely C:\Program Files\CMAP8000.

Save a backup of the original configuration file for safety.

Step 1

From the desktop click **Start►Programs►CMAP8000►Convert** to display the "Conversion Program for RPCU Configuration Files" interactive window:

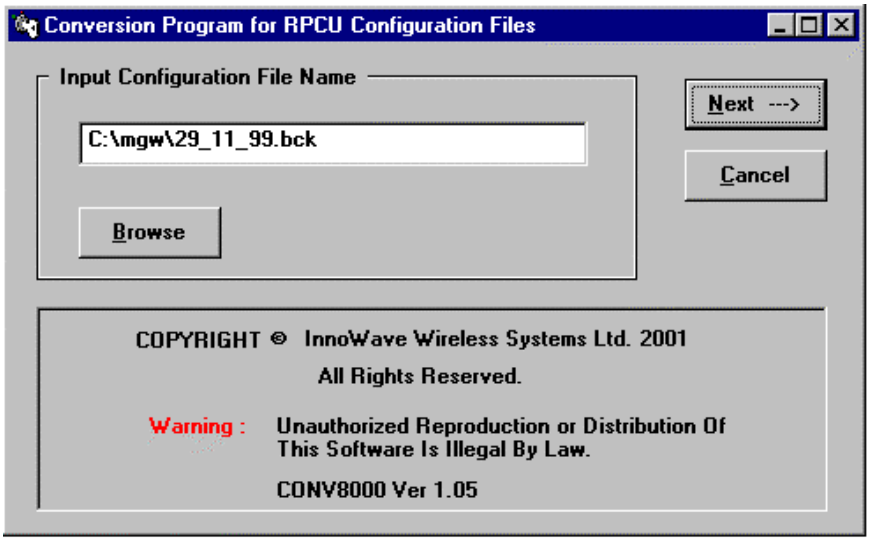

Conversion Program for RPCU Configuration Files
Input Configuration File Name
C:\mgw\29_11_99.bck
Browse
Next --->
Cancel
COPYRIGHT © InnoWave Wireless Systems Ltd. 2001
All Rights Reserved.
Warning : Unauthorized Reproduction or Distribution Of This Software Is Illegal By Law.
CONV8000 Ver 1.05

Figure G-1: Conversion Program – Input Configuration File Name Selection

NOTE

Verify the version of the utility is CONV8000 Ver 1.05.

Click the Browse button to open the interactive window enabling selection of the backup MGW configuration file you wish to convert. Click the Open button in the interactive window to return to the "Conversion Program for RPCU Configuration Files" interactive window:

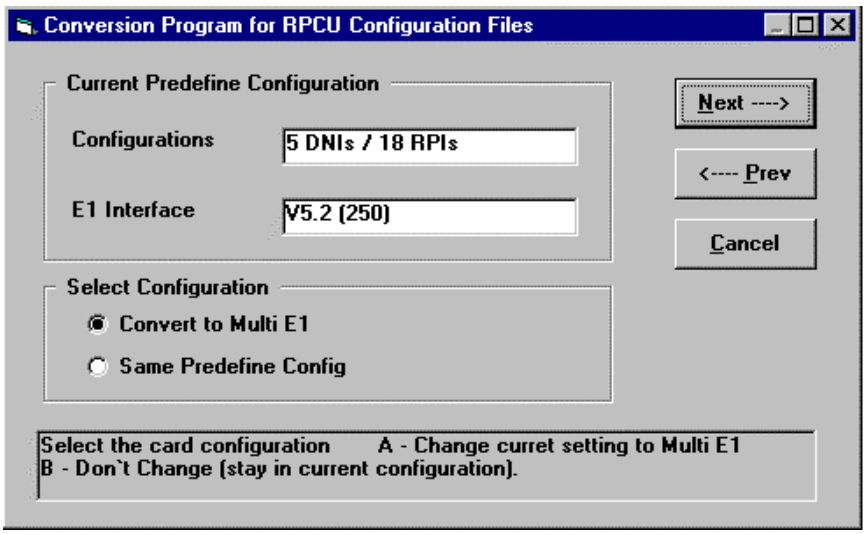


Figure G-2: Conversion Program – Configuration Selection

The current configuration of the RPCU and the E1 interface type (NIT) are displayed in the "Current Predefine Configuration" frame.

In the "Select Configuration" frame check the appropriate radio button: "Convert to Multi E1," to convert the configuration to Multi E1 or "Same Predefine Config," to remain with the predefined configuration, namely V5.2 single E1 mode.

NOTE

The latter selection converts the backup file format to an xMAP 2.3 backup file format.

Step 2

If you wish to convert to Multi E1, select the "Convert to Multi E1" radio button and click the Next button to display the "Rearrange Co Ports Connection" interactive window:

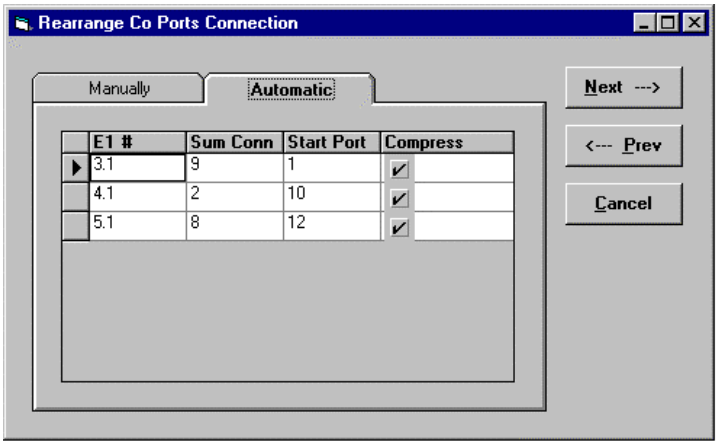


Figure G-3: Conversion Program - Automatic Conversion

NOTE

It is strongly recommended to proceed only using the Automatic option

Proceed using either one of the "Manually" or "Automatic" options.

Step 3

AUTOMATIC OPTION

Click the "Automatic" tab to display the Automatic option. The configured E1s are listed in the left column. The "Sum Conn" column lists the total number of ports (subscribers) previously assigned for the respective single E1. The "Start Port" column shows the first ports in the Multi E1 mode, from which the ports of the relevant single E1s, are reassigned sequentially and compressed.

In the automatic option, all fields are read-only.

MANUAL OPTION

Click the "Manual" tab to enable manual insertion of the desired parameter to the Start Point column and to check/uncheck the Compress box. This allows the operator to preserve/reduce gaps.

For example, in Table G-1 the Start Port appears as the first port in the final assignment if compression is needed. In this case all the gaps are reduced.

Conversely, if compression is not required, the Start Port would appear as an offset to the originally assigned ports.

Table G-1: Basic Parameters

Original E1	Total Subscribers	Original assignments	rt Port	Compressed	Final assignment
3.1	9	1,2,3,4,5,6,7, 21,22	1	Y	1-9
				N	1,2,3,4,5,6,7, 21,22
4.1	2	10,12	101	Y	101,102
				N	110,112
5.1	8	5,6,9,11,12,13,14,15	501	Y	501-508
				N	505,506,509, 511,512,513, 514,515

NOTE

Select the parameters carefully to avoid overlaps on the final assignment list.

Proceed by clicking the Next button to display the “Multi E1 V5.2 Provisioning” interactive window:

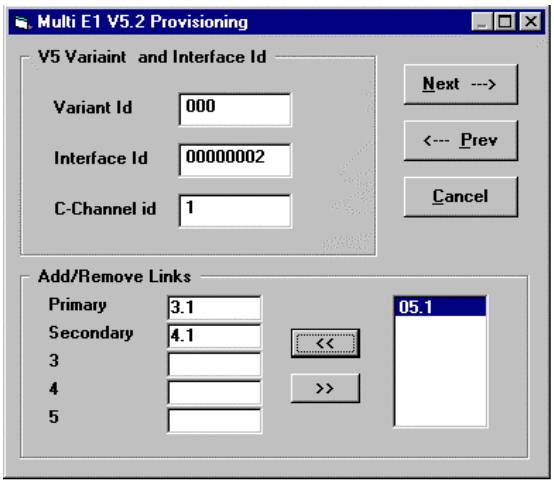


Figure G-4: Conversion Program - Multi E1 V5.2 Provisioning

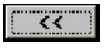
Step 4

Enter the following data elements in the "V5 Variant and Interface Id" frame
(see Figure G-4 above):

Table G-2: V5 Variant Data Elements

Field	Data Element
Variant ID	Any valid number in the range 0 to 127, common to the entire E1 bundle, coordinated with the CO administrator.
Interface ID	Any valid number, common to the entire E1 bundle, coordinated with the CO administrator.
C-Channel ID	Logical C-Channel ID of the CONTROL, LINK, BCC, PSTN and ISDN C-Paths; all these should be bundled into a single C-Channel. C-Channel logical Id provisioning can accept any valid number and must be coordinated with CO Logical C-Channel.

The primary, secondary and regular E1 links are selected, as follows:

In the "Add/Remove Links" frame (see Figure G-4) select the relevant DNI card indication from the right hand side box and move it, using the  button, to the appropriate link position (left hand side box). In , DNI's 3.1 and 4.1 were already defined as part of the Multi E1 bundle, while DNI's 5.1, still needs to be defined.

Click the Next button to display the final Conversion Program interactive window:

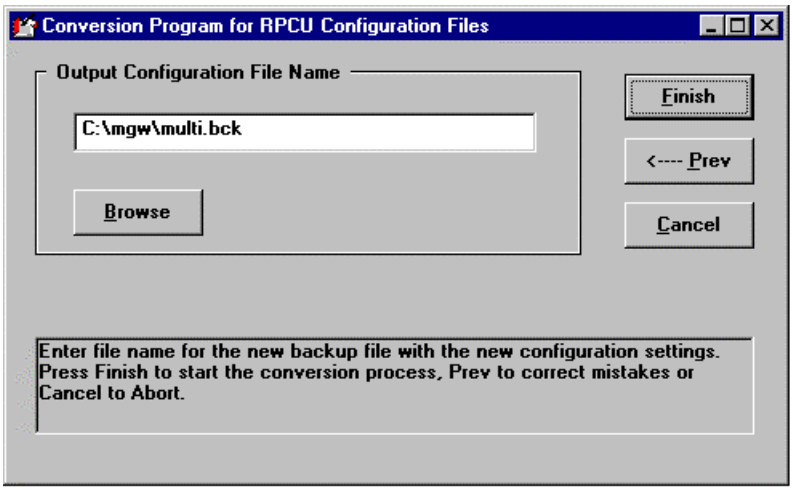

Conversion Program for RPCU Configuration Files
Output Configuration File Name
C:\mgw\multi.bck
Browse
Finish
<---- Prev
Cancel
Enter file name for the new backup file with the new configuration settings.
Press Finish to start the conversion process, Prev to correct mistakes or
Cancel to Abort.

Figure G-5: Conversion Program

Step 5

Enter the output configuration filename (including the path) and click the Finish button to display a message indicating conversion completion.

At this stage, transmit the output *.bck file to the RPCU (see Section *Transmit config to RPCU*).

Appendix H - Windows Load Target

In This Appendix

- FAU Setup, on page H-2
- WLT Installation, on page H-3
- Main Menu, on page H-4
- FAU/FAU_B Flash Loading Procedure, on page H-7

FAU Setup

The FAU setup to support “Load Application” and “Load Boot,” is as follows:

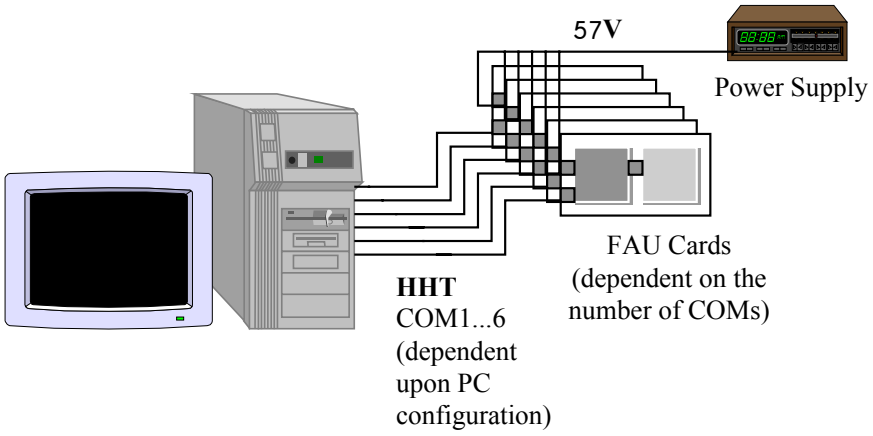


Figure H-1: FAU Card Setup

"Load Application" can run simultaneously up to eight FAU units.

WLT Installation

To install the WLT utility:

1. Start Windows 95/98/ME.
2. Copy the WLT “exe” file from the CD supplied to the CMAP 8000 folder.
3. Click the file that you want to create a shortcut to.
4. On the File menu, click Create Shortcut.
5. Drag the shortcut icon onto the desktop for convenient user access to the WLT utility.

Main Menu

Double click the WLT desktop shortcut icon to display the WLT main screen:

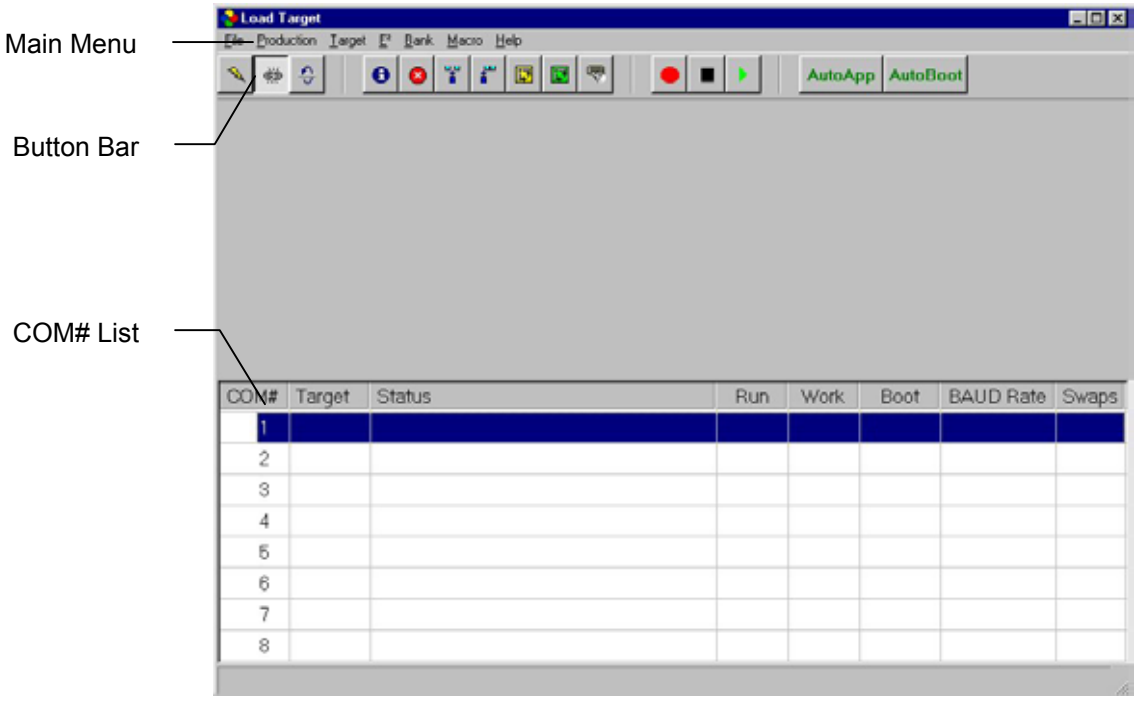


Figure H-2: Load Target – Main Screen

NOTE

The user generally can chose between three Windows options to activate menu functions:

1. Main menu item drop down menu
2. Button bar
3. Click the right mouse button on the COM# list to display the shortcut menu

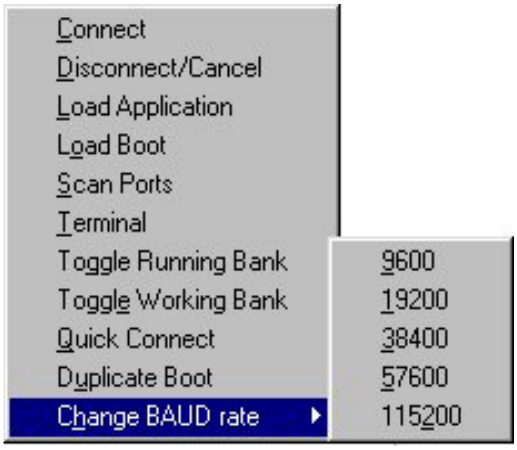
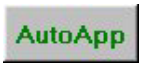


Figure H-3: Shortcut Menu

Table H-1: Button Bar					
Icon	**Function**	**Icon**	**Function**	**Icon**	**Function**
	Connect		Load Application		Record Macro
	Disconnect		Load Boot		Stop Macro
	Reset		Change Running Bank		Play Macro
			Change Working Bank		
	Scan Ports		Terminal		Auto Load Application
	Cancel Operation				Auto Load Boot

To display the Connect status of a selected COM#:

1. highlight the respective row in the COM# list and do one of the following:
    1. Click the **Target > Connect** menu item, or
    2. Click the **Connect** button in the button bar, or
    3. Click the right mouse button and select **Connect** from the shortcut menu.

The Connect Status is defined according to:

- Run Bank – 0/1
- Work Bank – 0/1
- Boot – Version number
- BAUD rate – FAU_A: 9600 to 19,200 FAU_B: 9600 to 115200
- Swaps – Number of time the Run bank can be swapped

The **Reset** (only available as button) function is comparable to the Windows reset operation. This function is invoked when the "Status" displays EMON and you wish to Load Target.

To scan all ports:

1. Click the **File > Scan Ports** menu item, or
2. Click the **Scan Ports** button, or
3. Click the right mouse button to display the shortcut menu and select **Scan Ports.**

To communicate directly with the FAU, click the **Target > Terminal** menu item or appropriate button to open the terminal window:

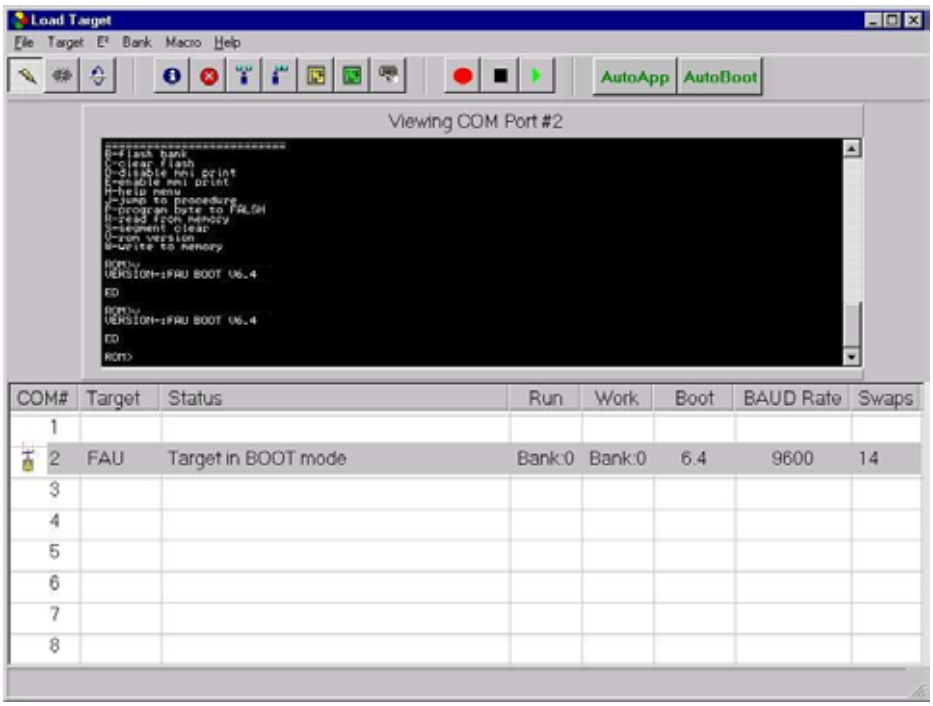


Figure H-4: Main Screen Incorporating Terminal; Window

FAU/FAU_B Flash Loading Procedure

Before proceeding, the user is advised to note the following:

1. Only when a target is in BOOT mode can a new version of BOOT or APPLICATION be loaded.
2. If the target is in EMON mode, press the **Reset** button to invoke BOOT mode.
3. Increase download rate by closing the terminal window.

Select PC COM

To select the PC COM:

1. Click to highlight the COM#1 row (each row represents a given serial port)
2. Click the **Target > Connect** menu item (or **Connect** button) to display the Connect status:
   - Target – UNKN
   - Status – No TARGET was found
   - BAUD Rate – 9600 (default)
   - For UNKN Status: Run, Work, Boot and Swaps columns are empty
3. Click the right mouse key to display the short cut menu.
4. Invoke **Quick Connect** to select COM #1. After identifying the target, the first line displays:
   - Target – FAU/FAU_B
   - Status – Target in BOOT mode
   - Boot – Version number
   - BAUD rate – 19,200
   - Run, Work and Swaps are all zero.
5. Click on the next COM # and repeat Steps 2 to 4.
6. Connect all the targets.

NOTE

Select all ports simultaneously by invoking **File > Scan Parts**.

Loading the BOOT

To load the BOOT:

1. To select a higher BAUD rate, for FAU_B only, click the right mouse key and select **Change BAUD Rate** from the short cut menu and desired speed (up to 115200 for FAU_B) (see Figure H-3).
2. Run and Work Banks must be zero in order to load BOOT.
3. Click the **Target > Boot > Load Boot** menu item (or appropriate button) to display the "Password" dialog window:

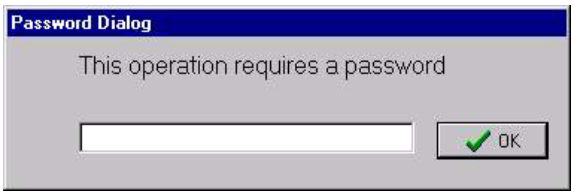


Figure H-5: Password Dialog Popup Window

4. Enter the password (obtainable from Alvarion Support Desk) and **OK** to display the "Open" window:

Figure H-6: Open Dialog Window (sample)

5. Select the appropriate HEX file[4]:

   Rom_code.hex for FAU_A or

   boot.i32 for FAU_B.

6. Click **OK** to initiate automatic start of the downloading process. Check Status for "time left (by percentage)" to completion.

7. Click the **Target > Boot > Duplicate Boot** menu item to display the password dialog popup window (see Figure H-5).

8. Enter the password provided by Alvarion Support Desk and click OK for the process to continue automatically.

Loading the Application

To load the application:

1. To select a higher BAUD rate for all targets, mark all targets by holding down the shift key and clicking on the first and last lines.

2. Press the right mouse key to display the corresponding menu and select the "change BAUD rate" item and desired speed for the relevant card.

3. Select all FAU's (see Select PC COM section, Item #5)

4. Activate Load Application to display the "Open" dialog window (see Figure H-6).

5. Select the HEX file "FAU_ROM_SC.i32" for FAU_B, or "FAU.hex" for FAU.

6. Press **OK** to initiate the automatic downloading process.

NOTE

Applications are loaded one at a time, however, the user can load subsequent cards while a previous card is loading.

7. When the downloading process is completed, "application loaded and the Checksum" will appear on all target lines.

[4] HEX files are provided by Alvarion, together with instructions for disk storage location. In the case of FAU_A, an additional file (Load_rom.hex) is provided but not displayed in the "Open" window.

Automatic Boot and Application Download

Automatic boot and application downloading is recommended for downloading to multiple cards.

The user must define the WLT.INI file before proceeding with automatic downloading. The WLT program configuration file, WLT.INI, has the following format:

```
[COM]
PORTS = comma delimited list of desired ports
[Target type]:
BAUD = baud rate
BOOT_FILE= full path of boot file
APP_FILE = full path of application file
DUPLICATE_BOOT = 1 - duplicate the boot, 0 - do not
duplicate
```

The "target type" section is repeated for each target type: (FAU-A or FAU-B)

“Auto Boot” and “Auto Application” options are accessible via:

- Keyboard shortcut (**F4** for boot and **F9** for application download)
- Main menu Production item, including Auto Load Application, Auto Load Boot and Edit IN File sub items.
- Toolbar

Select PC COM, Loading the BOOT and Loading the Application are executed automatically.

NOTE

If, when loading multiple targets with BOOT or APPLICATION, a target fails, wait for S/W download to complete before reconnecting the failed target.

Glossary

AIR LINK	Radio link between Radio Port and Subscriber Unit
AIU	Analog Interface Unit
ANT	Antenna
CMAP	CraftMap – man-machine interface for local control
CO	Central Office
CPE	Customer Premises Equipment
CRC	Cyclic Redundancy Code
DNI	Digital Network Interface
DNI	Digital Network Interface Card (p/o RPCU)
E1	2 Mbit trunk
FAU	Fixed Access Unit
FARMON	FAU Remote MONitoring
Focus	Menu availability dependent upon the object in Focus
Frequency Series	A series of frequencies assigned to a group of RPU's, enabling frequency hopping within the frequency range.
GPS	Global Positioning System
GSS	Global Synchronization System
GTU	GPS Timing Unit
HHT	Hand Held Terminal

Instance	Object appearance
LE	Local Exchange
LED	Light Emitting Diode
MAP	Maintenance & Administration Program
MDSL	Multi Digital Subscriber Line
MGW	MultiGain Wireless
MPM	Main Processing Module Card
N/A	Not available
NMI	Network Management Interface Card
OMAP	OfficeMap- man-machine interface for local control of a chained series of network elements located at the same site.
OOS	Out Of Service
Phase No.	The initial frequency index of a Frequency Series for a specific RPU.
Radio Subs. ID	FAU customer ID
RMON	Remote MONitoring
RPC	Radio Port Coupler
RPCU	Radio Port Control Unit
RPI	Radio Port Interface
RPU	Radio Port Unit
Sector	RPCU-controlled space, divided into sectors, with each sector assigned a unique number. One or more RPUs are defined for each sector.
Sector No.	The sector covered by a given RPU
Site #	Base station site number
SU	Subscriber Unit
SU#	Subscriber Unit Number
TID	Terminal Identification
WER	Word Error Rate

XMAP	CraftMAP/OfficeMAP/SuperOfficeMAP